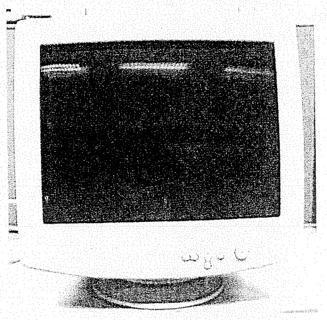
17" Auto scan Colour Monitor **Chassis :CM2300**

Service
Service
Service

EPA POLLUTION PREVENTER
DDC/Power saving/TCO
User-friendliness Control

107S CM23 GSIII



107S11/97C(COCA+)

Service Manual

Horizontal frequencies
30 - 70 kHz

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING.

REFER TO BACK COVER FOR IMPORTANT SAFETY GUIDELINES

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飛利浦 PHILIPS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all PHILIPS Company** Equipment.
The service procedures recommended by PHILIPS and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully Read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper Service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. PHILIPS could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, PHILIPS has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by PHILIPS must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

** Hereafter throughout this manual, PHILIPS Company Will be referred to as PHILIPS.

WARNING

Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematics or exploded views.

Use of substitute replacement parts which do not have the same specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from PHILIPS. PHILIPS assumes no liability, express or implied, arising out of any unauthorized modification Of design.
Servicer assumes all liability.

* **Broken Line** ▬ ▪ ▬ ▪ ▬ ▪

FOR PRODUCTS CONTAINING LASER :

DANGER- Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION- The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Technical Data

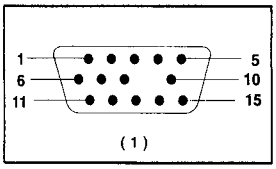
Technical Specification*

CRT
Size and deflection :17 inch/41cm,90° defection angle
Dot pitch/Grille pitch : 0.27mm
Horizontal pitch : 0.24mm
Tube type : Shadow mask,flat square, high contrast, antiglare, anti-static, anti-refleection, light transmission 47%
Phosphor : P22
Recommended display area : 12.0"x9.0"/306 x 230 mm
Maximum display area : 12.9"x9.7"/327 x 245 mm
Scanning
Horizontal scanning : 30 - 70 KHz
Vertical scanning : 50 - 160 Hz
Video
Video dot rate : 108 Mhz
Input impedance
-Video : 75 Ohm
- Sync : 2.2 kOhm
Input signal levels : 0.7Vpp
Separate sync
Sync input signal : Composite sync
Sync polarities : Positive and negative
White Color Temperature
Chromaticity CIE coordinates:

at 9300 °k	x = 0.283	y = 0.297
at 6500 °k	x = 0.313	y = 0.329

Power Management
Complies with EPA Energy Star and NUTEK specifications
Typical operation : 75 W
Suspend/Standby Mode : < 8 W
Off Mode : < 2.5 W
Physical Specifications
Dimensions : 399x373x408mm(excluding base)
399x410x408mm(including base)
Net weight : 15 Kg
Power supply : 90 - 264 VAC, 50/60HZ
Power consumption : 105 Watt
Operating condition
Temperature : 0 ° C - 40 ° C
Relative Humidety : 5 % - 95 %
Storage condition
Temperature : - 25 ° C - 65 ° C
Relative Humidity : 5 % - 95 %

Pin assignment :



The 15-pin D-sub connector(male) of the signal cable :

Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin present
2	Green video input	10	Ground
3	Blue video input	11	Ground
4	Ground	12	Serial data line(SDA)
5	Self test	13	H.Sync
6	Red video ground	14	V.Sync(VCLK for DDC)
7	Green video ground	15	Data clock line(SCL)
8	Blue video ground		

Data Storage

Factory preset mode:

This monitor has 10 factory-preset modes as indicated in the following table :

	Mode	Resolution	Frequen		Sync polarity	
			H(KHz)	V(Hz)	H	H
M01	VGA	720 x 400	31.5	70	-	+
M02	VGA	640 x 480	31.5	60	-	-
M03	VGA	640 x 480	43.3	85	-	-
M04	SVGA	800 x 600	46.9	75	+	+
M05	SVGA	800 x 600	53.7	85	+	+
M06	EVGA	1024 x 768	60.0	75	+	+
M07	EVGA	1024 x 768	68.7	85	+	+
M08		1280 x 1024	64.0	60	+	+

Automatic Power Saving

If you have VESA's DPMS compliance display card or software installed in your PC, the monitor can automatically reduce is power consumption when not in use. And if an input from keyboard, mouse or other input devices is detected, the monitor will automatically "wake up". The following table shows the power consumption and signaling of this automatic power saving feature :

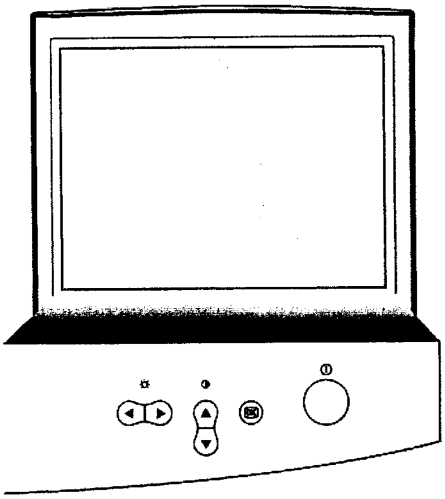
Power Management Definition

VESA's mode	VIDEO	H-SYNC	V-SYNC	POWER USED	POWER SAVING(%)	LED COLOR
ON	Active	Yes	Yes	< 100 W	0 %	Green
Stand-by	Blanked	No	Yes	< 15 W	>85 %	Yellow
Suspend	Blanked	Yes	No	< 15 W	>85 %	Yellow
OFF	Blanked	No	No	< 5 W	>95 %	Amber

This monitor is Environmental Protection Agency (EPA) Energy Star compliant and TCO'99 power management compatible.
*Zero power consumption in OFF mode can only be achieved by disconnecting the mains cable from the monitor.

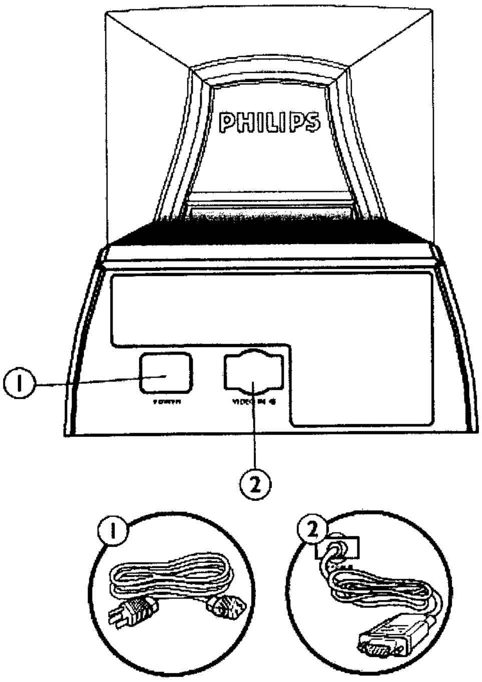
ENERGY STAR ® is a U.S. registered mark. AS AN ENERGY STAR PARTNER, DELL Computer Corporation HAS DETERMINED THAT THIS PRODUCT MEETS THE ENERGY STAR GUIDELINES FOR ENERGY EFFICIENCY.

Front View



- ⏻ Power button switches your monitor on.
- ● OK button which when pressed will take you to the OSD controls
- ◐ Contrast hotkey. When the UP arrow is pressed, the adjustment controls for the CONTRAST will show up.
- ▲▼ UP and DOWN buttons are used when adjusting the OSD of your monitor
- ☼ Brightness hotkey. When both the LEFT and RIGHT arrows are pressed at the same time, then the adjustment controls for BRIGHTNESS will show up.
- ◀▶ LEFT and RIGHT buttons, like the UP and DOWN buttons, are also used in adjusting the OSD of your monitor.

Rear V


PHILIPS
①
②
①
②

1. Power in - attach power cable here.
2. Video In - this is a cable which is already attached to your monitor. Connect the other end of the cable to your PC.

On-Screen Display

Description of the On-Screen Display The OSD Tree The OSD Controls

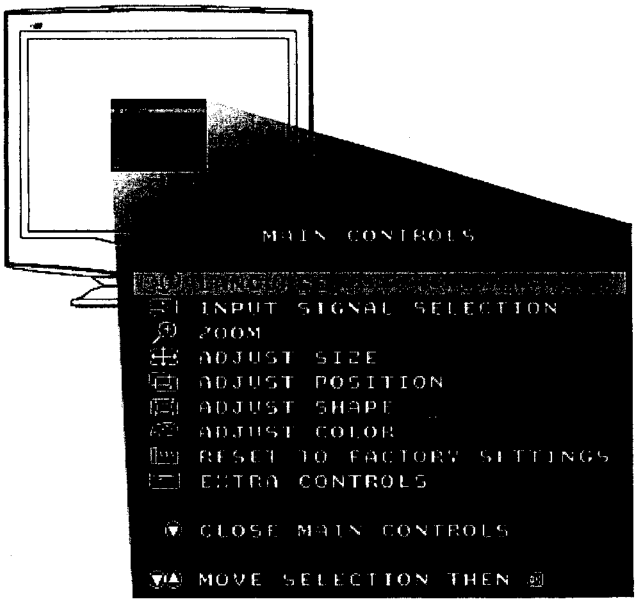
Description of the On Screen Display

What is the On-Screen Display?

This is a feature in all Philips monitors which allows an end-user to adjust screen performance of monitors directly though an on-screen instruction window. The user interface provides user-friendliness and ease-of-use when operating the monitor.

Basic and simple instruction on the control keys.

On the front controls of your monitor, once you press the ● button, the On Screen Display (OSD) Main Controls window will pop up and you can now start making adjustments to your monitor's various features. Use the ◀ ▶ or ▲ ▼ the keys to make your adjustments within.


MAIN CONTROLS
INPUT SIGNAL SELECTION
ZOOM
ADJUST SIZE
ADJUST POSITION
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS
CLOSE MAIN CONTROLS
MOVE SELECTION THEN

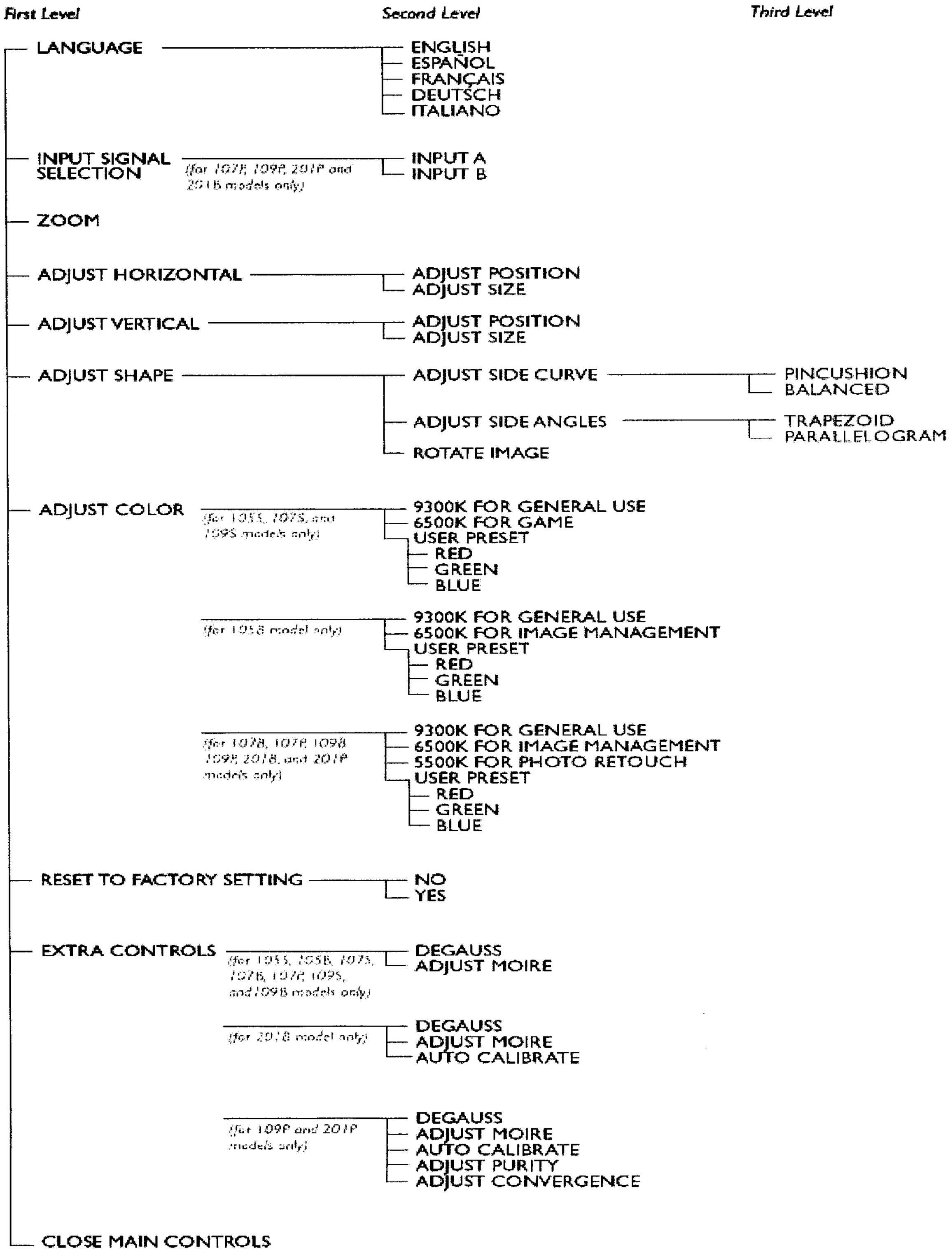
The OSD Tree

Below is an overall view of the structure of the On-Screen Display. You can use this as reference when you want to later on work your way around the different adjustments.

OSD menu tree structure

The OSD Tree

Below is an overall view of the structure of the On-Screen Display. You can use this as reference when you want to later on work your way around the different adjustments.



First Level — *Second Level* — *Third Level*

- LANGUAGE
  - ENGLISH
  - ESPAÑOL
  - FRANÇAIS
  - DEUTSCH
  - ITALIANO
- INPUT SIGNAL SELECTION *(for 107B, 109P, 201P and 201B models only)*
  - INPUT A
  - INPUT B
- ZOOM
- ADJUST HORIZONTAL
  - ADJUST POSITION
  - ADJUST SIZE
- ADJUST VERTICAL
  - ADJUST POSITION
  - ADJUST SIZE
- ADJUST SHAPE
  - ADJUST SIDE CURVE
    - PINCUSHION
    - BALANCED
  - ADJUST SIDE ANGLES
    - TRAPEZOID
    - PARALLELOGRAM
  - ROTATE IMAGE
- ADJUST COLOR
  - *(for 105S, 107S, and 109S models only)*
    - 9300K FOR GENERAL USE
    - 6500K FOR GAME
    - USER PRESET
      - RED
      - GREEN
      - BLUE
  - *(for 105B model only)*
    - 9300K FOR GENERAL USE
    - 6500K FOR IMAGE MANAGEMENT
    - USER PRESET
      - RED
      - GREEN
      - BLUE
  - *(for 107B, 107P, 109B, 109P, 201B, and 201P models only)*
    - 9300K FOR GENERAL USE
    - 6500K FOR IMAGE MANAGEMENT
    - 5500K FOR PHOTO RETOUCH
    - USER PRESET
      - RED
      - GREEN
      - BLUE
- RESET TO FACTORY SETTING
  - NO
  - YES
- EXTRA CONTROLS
  - *(for 105S, 105B, 107S, 107B, 107P, 109S, and 109B models only)*
    - DEGAUSS
    - ADJUST MOIRE
  - *(for 201B model only)*
    - DEGAUSS
    - ADJUST MOIRE
    - AUTO CALIBRATE
  - *(for 109P and 201P models only)*
    - DEGAUSS
    - ADJUST MOIRE
    - AUTO CALIBRATE
    - ADJUST PURITY
    - ADJUST CONVERGENCE
- CLOSE MAIN CONTROLS

• Specifications are subject to change without prior notice

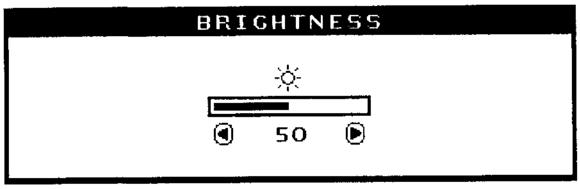
OSD Adjustments

The OSD Controls

BRIGHTNESS

To adjust your screen's brightness, follow the steps below. Brightness is the overall intensity of the light coming from the screen. A 50% brightness is recommended.

1) Press the ◄ or ► button on the monitor. The BRIGHTNESS window appears.


BRIGHTNESS
◄ 50 ►

2) Press the ◄ or ► button to adjust the brightness.

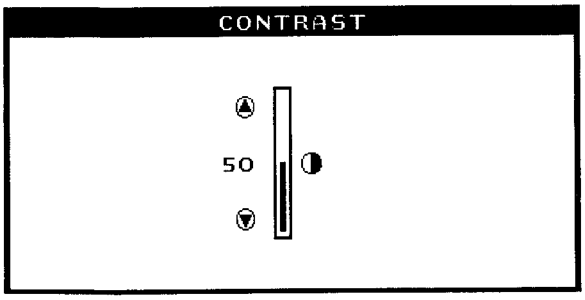
3) When the brightness is adjusted to the level desired, stop pressing the◄ or ► button and after three seconds the BRIGHTNESS window will disappear with the new adjustment saved.

Smart Help After the BRIGHTNESS window has disappeared, to continue to the CONTRAST window, follow the steps under CONTRAST.

CONTRAST

To adjust your screen's contrast, follow the steps bellow. Contrast is the difference between the light and dark areas on the screen. A 100% contrast is recommended.

1) Press the ▲ or ▼ button on the monitor. The CONTRAST window appears.


CONTRAST
▲
50
▼

2) Press the ▲ or ▼ button to adjust the contrast.

3) When the contrast is adjusted to the level desired, stop pressing the ▲ or ▼ button and after three seconds the CONTRAST window will disappear with the new adjustment saved.

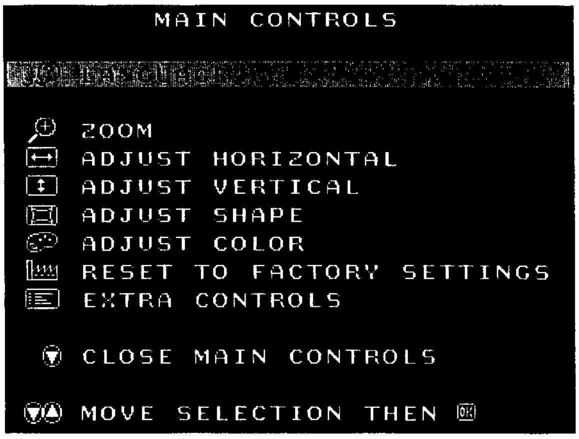
Smart Help After the CONTRAST window has disappeared, to continue to the MAIN CONTROLS, follow the steps under LANGUAGE

LANGUAGE

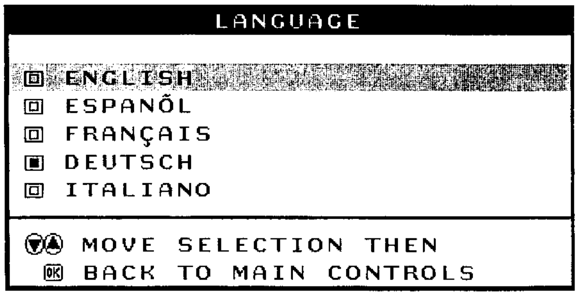
The ON SCREEN DISPLAY shows its settings in one of five languages. The default is English, but you can select French, Spanish, German, or Italian.

1) Press the ■ button on the monitor. The MAIN CONTROLS window appears. LANGUAGE should be highlighted.

2) Press the ■ button again. The LANGUAGE window appears.


MAIN CONTROLS
LANGUAGE
ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS
▼ CLOSE MAIN CONTROLS
▼▲ MOVE SELECTION THEN OK

3) Press the ▲ or ▼ button until the desired language is highlighted.


LANGUAGE
ENGLISH
ESPAÑOL
FRANÇAIS
DEUTSCH
ITALIANO
▼▲ MOVE SELECTION THEN
OK BACK TO MAIN CONTROLS

4) Press the ■ button to confirm your selection and return to MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted...

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to INPUT SIGNAL SELECTION, press the ▲ button until INPUT SIGNAL SELECTION is highlighted. Next, follow steps 3 - 5 under INPUT SIGNAL SELECTION.

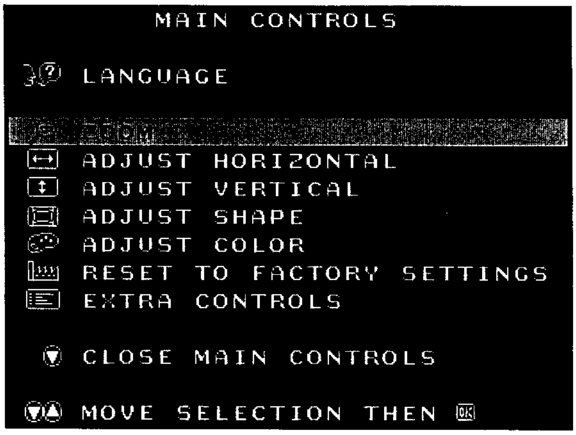
. . . to exit completely, press ■ the button

ZOOM

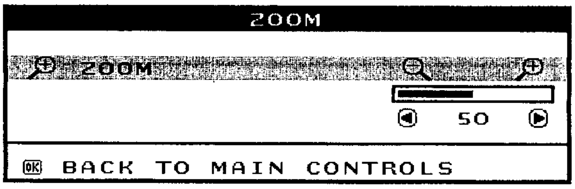
ZOOM increases or decreases the size of the images on your screen. To adjust the ZOOM follow the steps below.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ --button until ZOOM is highlighted.


MAIN CONTROLS
LANGUAGE
ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS
CLOSE MAIN CONTROLS
MOVE SELECTION THEN OK

3) Press the ● button. The ZOOM window appears.


ZOOM
ZOOM
50
OK BACK TO MAIN CONTROLS

4) Press the ◀ or ▶ button to adjust ZOOM.

5) Press the ● button to confirm your selection and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to ADJUST HORIZONTAL, press the ▼ button until ADJUST HORIZONTAL is highlighted. Next, follow steps 3 - 7 under ADJUST HORIZONTAL.

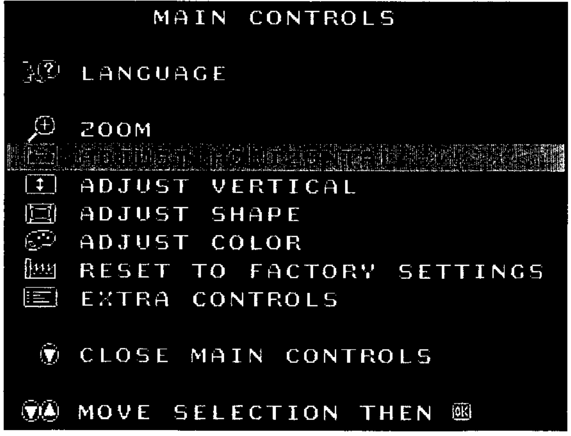
. . . to exit completely, press the ● button

ADJUST HORIZONTAL

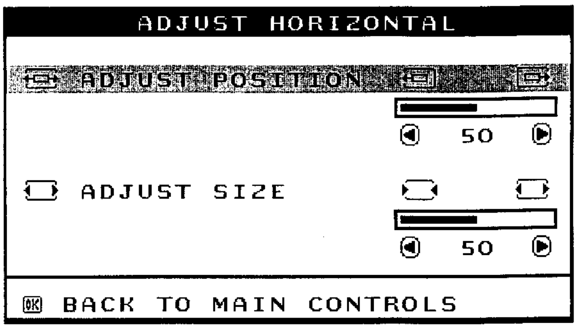
ADJUST POSITION under ADJUST HORIZONTAL shifts the image on your screen either to the left or right. Use this feature if your image does not appear centered. ADJUST SIZE under ADJUST HORIZONTAL expands or controls the image on your screen, pushing it out toward the left and right sides or pulling it in toward the center.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until ADJUST HORIZONTAL is highlighted.

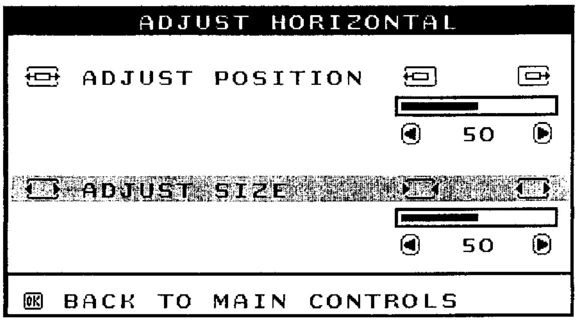

MAIN CONTROLS
LANGUAGE
ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS
CLOSE MAIN CONTROLS
MOVE SELECTION THEN OK

3) Press the ● button. The ADJUST HORIZONTAL window appears. ADJUST POSITION should be highlighted.


ADJUST HORIZONTAL
ADJUST POSITION
50
ADJUST SIZE
50
OK BACK TO MAIN CONTROLS

4) Press the ◀ or ▶ button to move the image to the left or right.

5) When the position is adjusted, press the ● button to return to MAIN CONTROLS window, or press the ▼ to highlight ADJUST SIZE.


ADJUST HORIZONTAL
ADJUST POSITION
50
ADJUST SIZE
50
OK BACK TO MAIN CONTROLS

6) To adjust the horizontal size, press the or button.

7) When the size is adjusted, press the button to return to MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to ADJUST VERTICAL, press the ▼button until ADJUST VERTICAL is highlighted. Next, start with step 3 under ADJUST VERTICAL and follow the directions.

. . . to exit completely, press the ● button

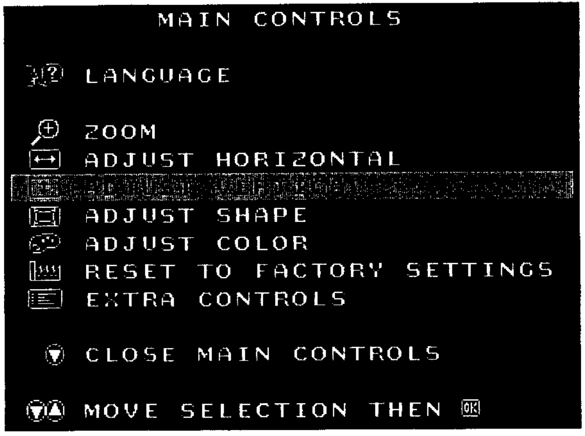
ADJUST VERTICAL

ADJUST POSITION under ADJUST VERTICAL shifts the image on your screen either up or down. Use this feature if your image does not appear centered. ADJUST SIZE under ADJUST VERTICAL expands or controls the image on your screen, pushing it out toward the top or bottom or pulling it in toward the center.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

OSD Adjustments

2) Press the ● button until ADJUST VERTICAL is highlighted.



MAIN CONTROLS

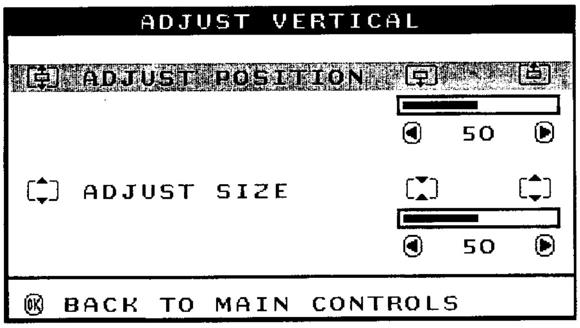
LANGUAGE

ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS

CLOSE MAIN CONTROLS

MOVE SELECTION THEN

3) Press the ● button. The ADJUST VERTICAL window appears. ADJUST POSITION should be highlighted.



ADJUST VERTICAL

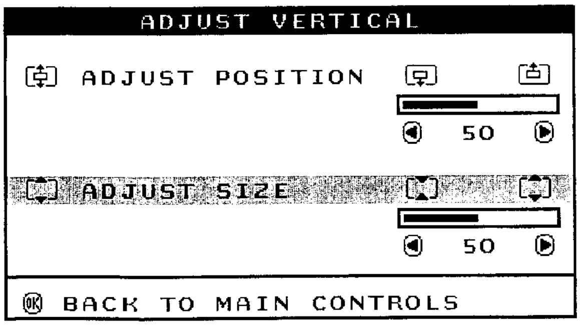
ADJUST POSITION
◀ 50 ▶

ADJUST SIZE
◀ 50 ▶

BACK TO MAIN CONTROLS

4) Press the or button to move the image up or down.

5) When the position is adjusted, press the ● button to return to MAIN CONTROLS window, or press the to highlight ADJUST SIZE.



ADJUST VERTICAL

ADJUST POSITION
◀ 50 ▶

ADJUST SIZE
◀ 50 ▶

BACK TO MAIN CONTROLS

6) To adjust the vertical size, press the or button.

7) When the size is adjusted, press the button to return to MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to ADJUST SHAPE, press the button until ADJUST SHAPE is highlighted. Next, start with step 3 under ADJUST SHAPE and follow the directions.

. . . to exit completely, press the ● button

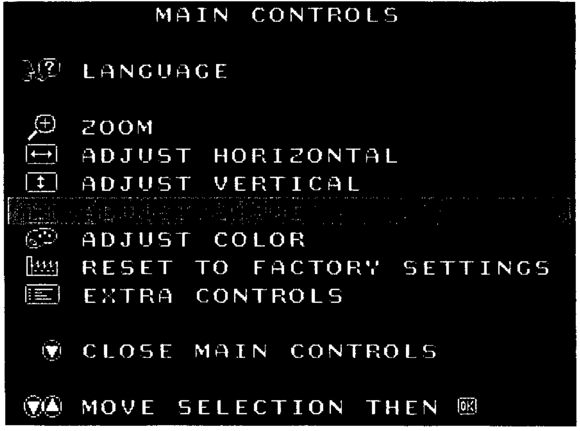
ADJUST SHAPE

ADJUST SIDE CURVE

ADJUST SIDE CURVE under ADJUST SHAPE allows you to adjust two of the five preset options. These two options are PINCUSHION and BALANCED pincushion. Note: use these features only when the picture is not square.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until ADJUST SHAPE is highlighted.



MAIN CONTROLS

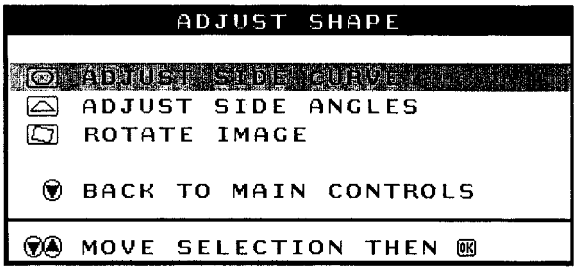
LANGUAGE

ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS

CLOSE MAIN CONTROLS

MOVE SELECTION THEN

3) Press the ● button. The ADJUST SHAPE window appears. ADJUST SIDE CURVE should be highlighted.



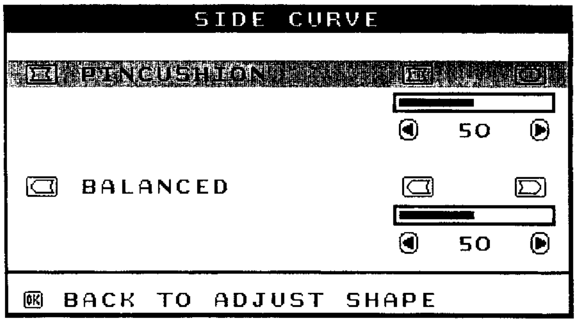
ADJUST SHAPE

ADJUST SIDE CURVE
ADJUST SIDE ANGLES
ROTATE IMAGE

BACK TO MAIN CONTROLS

MOVE SELECTION THEN

4) Press the ● button. The SIDE CURVE window appears. PINCUSHION should be highlighted.



SIDE CURVE

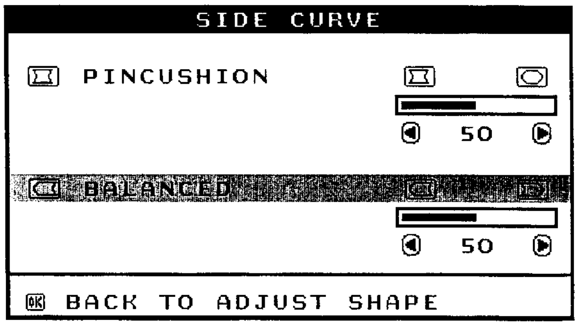
PINCUSHION
◀ 50 ▶

BALANCED
◀ 50 ▶

BACK TO ADJUST SHAPE

5) To adjust the pincushion, press the ◀ or ▶ button.

6) When the pincushion is adjusted, press the ▼ button to highlight BALANCED or press the ● button to return to the ADJUST SHAPE window.



SIDE CURVE

PINCUSHION
◀ 50 ▶

BALANCED
◀ 50 ▶

BACK TO ADJUST SHAPE

7) To adjust the balanced pincushion, press the ◀ or ▶ button.

8) When the balanced pincushion is adjusted, press the ● button to return to the ADJUST SHAPE window. BACK TO MAIN WINDOWS will be highlighted.

9) Press the ● button to return to the MAIN CONTROLS window, or

OSD Adjustments

Smart Help After returning to MAIN CONTROLS . . .

...to continue to ADJUST SIDE ANGLES, start with step 5 under ADJUST SIDE ANGLES and follow the directions.

...to exit completely, press the ● button twice.

...to adjust only the BALANCED pincushion, follow steps 1 - 4 above, then press the ▼ button, and follow steps 7 - 9.

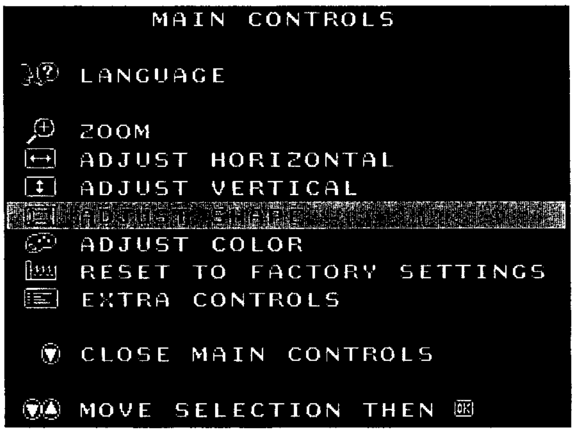
...to adjust only the PARALLELOGRAM, follow steps 1 - 4 above, then press the ▼ button, and follow steps 7 -9

ADJUST SIDE ANGLES

ADJUST SIDE ANGLES under ADJUST SHAPE allows you to adjust two of the five preset options. These two options are TRAPEZOID and PARALLELOGRAM. Note: use these features only when the picture is not square.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until ADJUST SHAPE is highlighted.



MAIN CONTROLS

LANGUAGE

ZOOM

ADJUST HORIZONTAL

ADJUST VERTICAL

ADJUST SHAPE

ADJUST COLOR

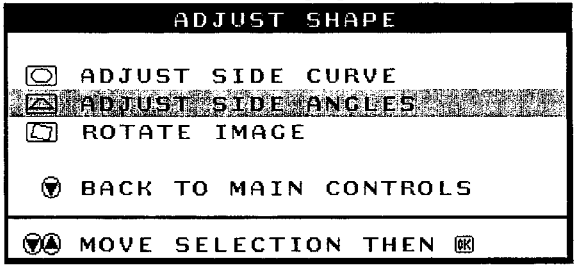
RESET TO FACTORY SETTINGS

EXTRA CONTROLS

CLOSE MAIN CONTROLS

MOVE SELECTION THEN OK

3) Press the ● button. The ADJUST SHAPE window appears. ADJUST SIDE CURVE should be highlighted.



ADJUST SHAPE

ADJUST SIDE CURVE

ADJUST SIDE ANGLES

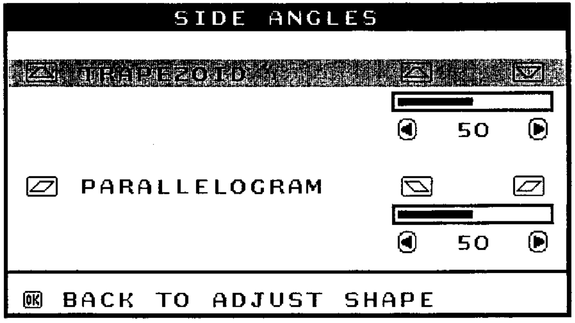
ROTATE IMAGE

BACK TO MAIN CONTROLS

MOVE SELECTION THEN OK

4) Press the ▼ button to highlight ADJUST SIDE ANGLES.

5) Press the ● button. The SIDE ANGLES window appears. TRAPEZOID should be highlighted.



SIDE ANGLES

TRAPEZOID

50

PARALLELOGRAM

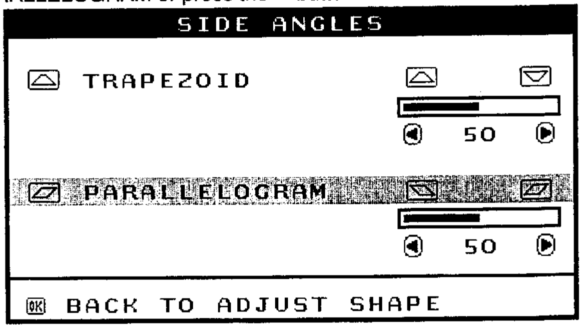
50

OK BACK TO ADJUST SHAPE

6) To adjust the trapezoid, press the ◄ or ► button.

SHAPE window.

7) When the trapezoid is adjusted, press the ▼ button to highlight PARALLELOGRAM or press the ● button to return to the ADJUST



SIDE ANGLES

TRAPEZOID

50

PARALLELOGRAM

50

OK BACK TO ADJUST SHAPE

8) To adjust the parallelogram, press the ◄ or ► button.

9) When the parallelogram is adjusted, press the ● button to return to the ADJUST SHAPE window. BACK TO MAIN WINDOWS will be highlighted.

10) Press the ● button to return to the MAIN CONTROLS window, or press the ▼ button until ROTATE IMAGE is highlighted.

Smart Help After returning to MAIN CONTROLS . . .

...to continue to ROTATE IMAGE, start with step 5 under ROTATE IMAGE and follow the directions.

...to exit completely, press the ● button twice.

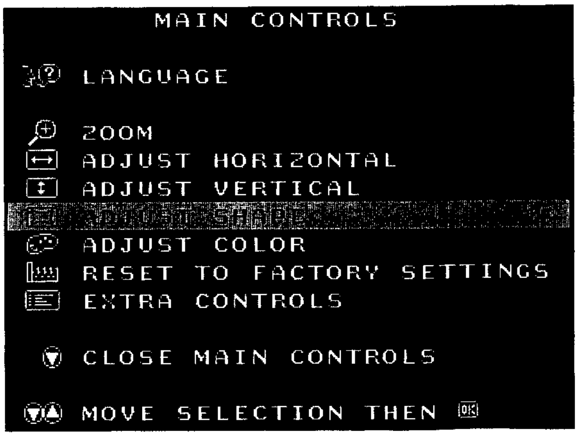
...to adjust only the PARALLELOGRAM, follow steps 1 - 4 above, then press the ▼ button, and follow steps 7 -9

ROTATE IMAGE (Not available in all models)

ROTATE IMAGE under ADJUST SHAPE allows you to adjust one of the five preset options. These two options are PINCUSHION and BALANCED pincushion. Note: use this feature only when the picture is not square.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until ADJUST SHAPE is highlighted.



MAIN CONTROLS

LANGUAGE

ZOOM

ADJUST HORIZONTAL

ADJUST VERTICAL

ADJUST SHAPE

ADJUST COLOR

RESET TO FACTORY SETTINGS

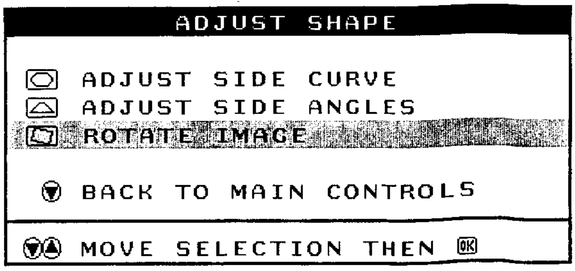
EXTRA CONTROLS

CLOSE MAIN CONTROLS

MOVE SELECTION THEN OK

3) Press the ● button. The ADJUST SHAPE window appears. ADJUST SIDE CURVE should be highlighted.

4) Press the ▼ arrow until ROTATE IMAGE is highlighted.



ADJUST SHAPE

ADJUST SIDE CURVE

ADJUST SIDE ANGLES

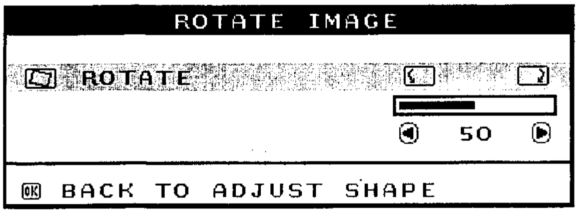
ROTATE IMAGE

BACK TO MAIN CONTROLS

MOVE SELECTION THEN OK

OSD Adjustments (Continued)

5) Press the ● button. The ROTATE IMAGE window appears. ROTATE should be highlighted.



ROTATE IMAGE

ROTATE

◀ 50 ▶

OK BACK TO ADJUST SHAPE

6) To adjust the rotation, press the ◀ or ▶ button.

7) When the rotation is adjusted, press the ● button to return to the ADJUST SHAPE window. BACK TO MAIN CONTROLS should be highlighted.

8) Press the ● button to return to MAIN CONTROLS.

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to ADJUST COLOR, press the ▶ button until ADJUST COLOR is highlighted. Next, start with step 3 under ADJUST COLOR and follow the directions.

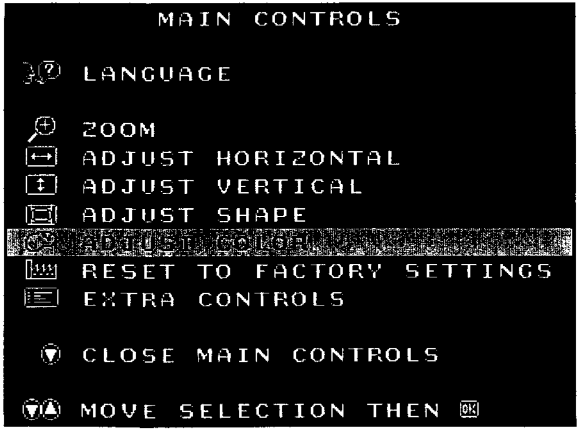
...to exit completely, press the ● button twice.

ADJUST COLOR

Your monitor has two preset options you can choose from. The first option is for GENERAL USE, which is fine for most applications. The second option is for GAMES, which is for playing computer games. When you select one of these options, the monitor automatically adjusts itself to that option. There is also a third option, USER PRESET, which allows you to adjust the colors on your screen to a setting you desire.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until ADJUST COLOR is highlighted.



MAIN CONTROLS

LANGUAGE

ZOOM

ADJUST HORIZONTAL

ADJUST VERTICAL

ADJUST SHAPE

ADJUST COLOR

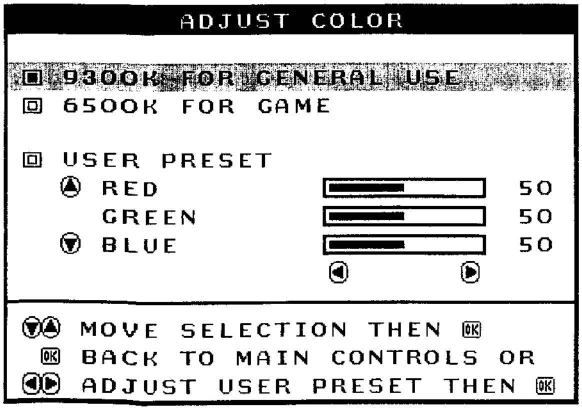
RESET TO FACTORY SETTINGS

EXTRA CONTROLS

▼ CLOSE MAIN CONTROLS

▼▲ MOVE SELECTION THEN OK

3) Press the ● button. The ADJUST COLOR window appears.



ADJUST COLOR

▣ 9300K FOR GENERAL USE

☐ 6500K FOR GAME

☐ USER PRESET

▲ RED 50

GREEN 50

▼ BLUE 50

◀ ▶

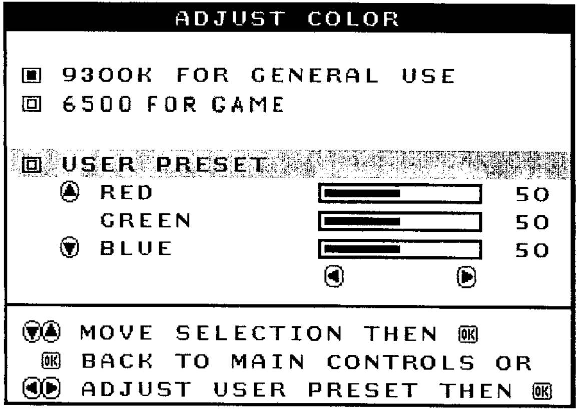
▼▲ MOVE SELECTION THEN OK

OK BACK TO MAIN CONTROLS OR

◀▶ ADJUST USER PRESET THEN OK

4) Press the ▲ or ▼ button to highlight 9300K for GENERAL USE, 6500K for GAMES, or USER PRESET.

5) Once you have highlighted GENERAL USE or GAMES, press the ● button to confirm you selection and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.



ADJUST COLOR

▣ 9300K FOR GENERAL USE

☐ 6500 FOR GAME

☐ USER PRESET

▲ RED 50

GREEN 50

▼ BLUE 50

◀ ▶

▼▲ MOVE SELECTION THEN OK

OK BACK TO MAIN CONTROLS OR

◀▶ ADJUST USER PRESET THEN OK

6a) ?If USER PRESET is highlighted, press the ▼ button to highlight RED. Next, press the LEFT CURSOR or RIGHT CURSOR button to adjust the color red.

6b) ?When finished with RED, press the ▼ button to highlight GREEN. Next, press the ◀ or ▶ button to adjust the color green.

6c) ?When finished GREEN, press the ▼ button to highlight BLUE. Next, press the ◀ or ▶ button to adjust the color blue.

6d) ?When all adjustments are complete, press the ● button to confirm your adjustments and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS. . .

. . . to continue to RESET TO FACTORY SETTINGS, press the ▲ button until RESET TO FACTORY SETTINGS is highlighted. Next, start with step 3 under RESET TO FACTORY SETTINGS.

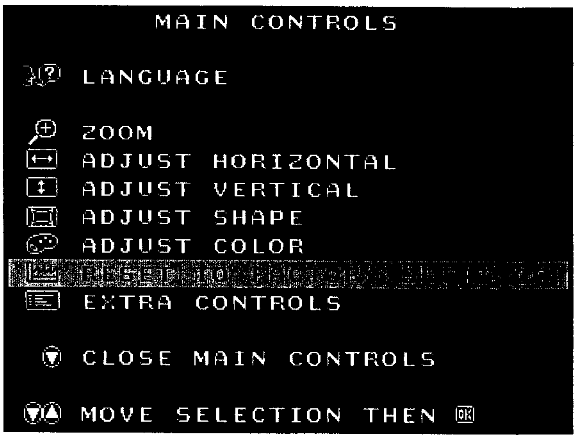
. . . to exit completely, press the ● button.

RESET TO FACTORY SETTINGS

RESET TO FACTORY SETTINGS returns everything in all the windows to factory presets.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until RESET TO FACTORY SETTINGS is highlighted.



MAIN CONTROLS

LANGUAGE

ZOOM

ADJUST HORIZONTAL

ADJUST VERTICAL

ADJUST SHAPE

ADJUST COLOR

RESET TO FACTORY SETTINGS

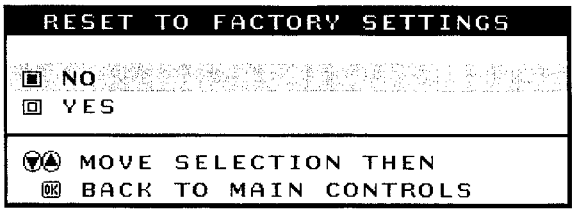
EXTRA CONTROLS

▼ CLOSE MAIN CONTROLS

▼▲ MOVE SELECTION THEN OK

3) Press the ● button. The RESET TO FACTORY SETTINGS window appears.

4) Press the ▲ or ▼ button to select YES or NO. NO is the default. YES returns all settings to their original factory adjustments.



RESET TO FACTORY SETTINGS

■ NO
▣ YES

▼▲ MOVE SELECTION THEN
OK BACK TO MAIN CONTROLS

5) Press the ● button to confirm your selection and return to the MAIN CONTROLS window. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to EXTRA CONTROLS, press the ▲ button until EXTRA CONTROLS is highlighted. Next, start with step 3 under EXTRA CONTROLS.

. . . to exit completely, press the ● button.

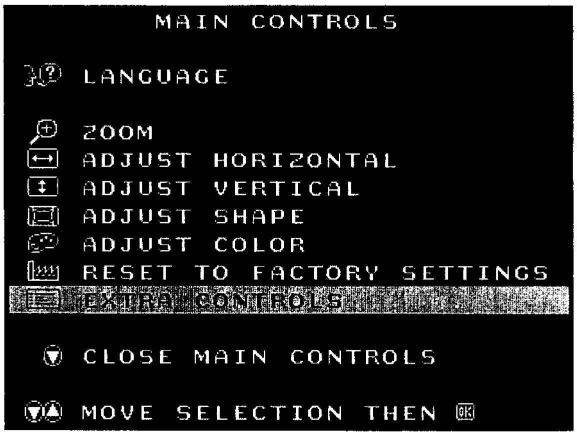
EXTRA CONTROLS

DEGAUSS

EXTRA CONTROLS is a set of three features, including DEGAUSS. Degaussing removes electromagnetic build up that may distort the color on your screen.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the ▼ button until EXTRA CONTROLS is highlighted.



MAIN CONTROLS

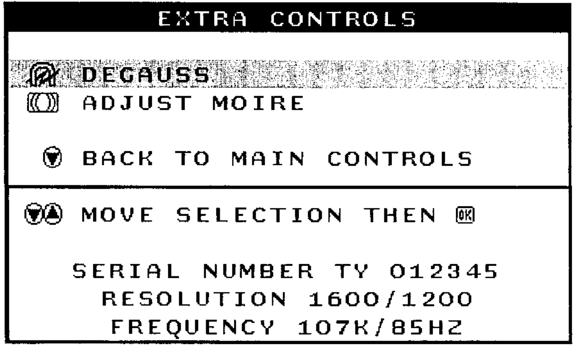
LANGUAGE

ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS

▼ CLOSE MAIN CONTROLS

▼▲ MOVE SELECTION THEN OK

3) Press the ● button. The EXTRA CONTROLS window appears. DEGAUSS will be highlighted.



EXTRA CONTROLS

DEGAUSS
ADJUST MOIRE

▼ BACK TO MAIN CONTROLS

▼▲ MOVE SELECTION THEN OK

SERIAL NUMBER TY 012345
RESOLUTION 1600/1200
FREQUENCY 107K/85HZ

4) To degauss your screen, press the ● button. Your screen will be degaussed, then the MAIN CONTROLS window will reappear. CLOSE MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS . . .

. . . to continue to ADJUST MOIRE, press the ▲ button until EXTRA CONTROLS is highlighted. Next, start with step 3 under EXTRA CONTROLS, ADJUST MOIRE.

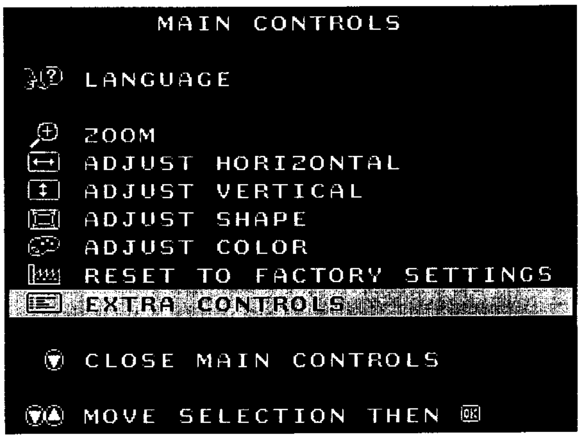
. . . to exit completely, press the ● button.

ADJUST MOIRE (Not available in all models)

EXTRA CONTROLS is a set of three features, including ADJUST MOIRE. Moire is a fringe pattern arising from the interference between two superimposed line patterns. To adjust your moire, follow the steps below. Note: Use only if necessary. By activating ADJUST MOIRE, sharpness can be affected.

1) Press the ● button on the monitor. The MAIN CONTROLS window appears.

2) Press the DOWN CURSOR button until EXTRA CONTROLS is highlighted.



MAIN CONTROLS

LANGUAGE

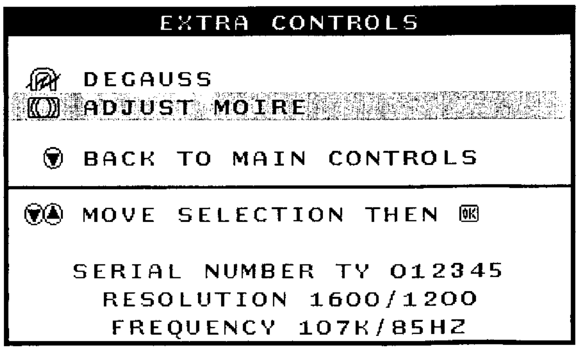
ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS

▼ CLOSE MAIN CONTROLS

▼▲ MOVE SELECTION THEN OK

3) Press the ● button. The EXTRA CONTROLS window appears. DEGAUSS will be highlighted.

4) Press the ▼ button until ADJUST MOIRE is highlighted.



EXTRA CONTROLS

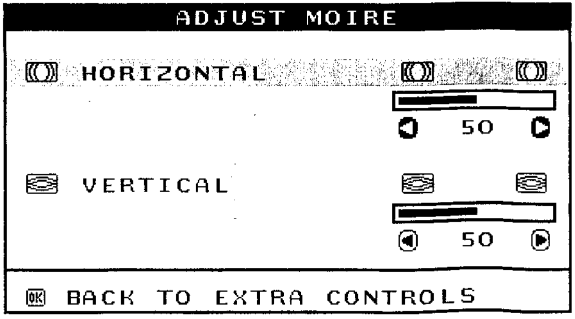
DEGAUSS
ADJUST MOIRE

▼ BACK TO MAIN CONTROLS

▼▲ MOVE SELECTION THEN OK

SERIAL NUMBER TY 012345
RESOLUTION 1600/1200
FREQUENCY 107K/85HZ

5) Press the ● button. The ADJUST MOIRE window appears. HORIZONTAL will be highlighted.



ADJUST MOIRE

HORIZONTAL 50

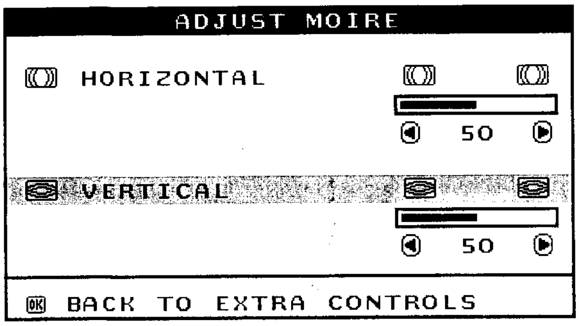
VERTICAL 50

OK BACK TO EXTRA CONTROLS

6) To adjust the horizontal moire, press the ◀ or ▶ button.

OSD Adjustments (Continued)

7) When the horizontal moire is adjusted, press the ▼ button to highlight VERTICAL.


ADJUST MOIRE
HORIZONTAL
50
VERTICAL
50
OK BACK TO EXTRA CONTROLS

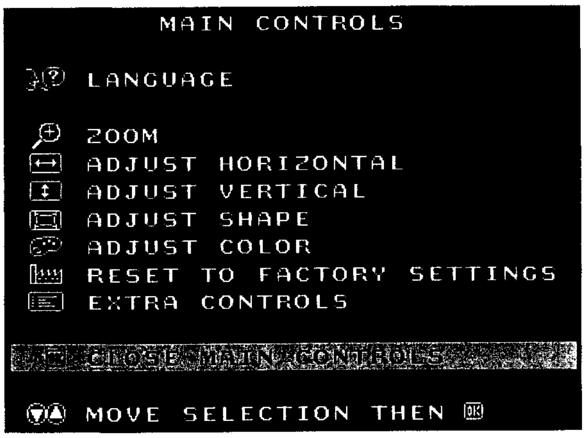
8) To adjust the vertical moire, press the ◄ or ► button.

9) When the vertical moire is adjusted, press the ● button to return to the EXTRA CONTROLS window. BACK TO MAIN CONTROLS will be highlighted.

Smart Help After returning to MAIN CONTROLS . . .

. . . to exit completely, press the ● button.

CLOSE MAIN CONTROLS


MAIN CONTROLS
LANGUAGE
ZOOM
ADJUST HORIZONTAL
ADJUST VERTICAL
ADJUST SHAPE
ADJUST COLOR
RESET TO FACTORY SETTINGS
EXTRA CONTROLS
CLOSE MAIN CONTROLS
MOVE SELECTION THEN OK

Warning and Notes

1. Safety Instructions for Repairs

1.1 Safety regulations require that during a repair:

- The set should be connected to the mains via an isolating transformer.
- Safety components, indicated by the symbol ⚠ , should be replaced by components identical to the original ones.
- When replacing the CRT, safety goggles must be worn.

1.2 Safety regulations require also that after a repair:

- The set should be returned in its original condition.
- The cabinet should be checked for defects to avoid touching, by the customer, of inner parts.
- The insulation of the mains lead should be checked for external damage.
- The mains lead strain relief should be checked on its function.
- The cableform and EHT cable are routed correctly and fixed with the mounted cable clamps in order to avoid touching of the CRT, hot components or heat sinks.

* Thermally loaded solder joints should be checked and resoldered where necessary. This includes components like LOT, the line output transistor, fly-back capacitor.

2. Maintenance Instructions

It is recommended to have a maintenance inspection carried out periodically by a qualified service employee. The interval depends on the usage conditions.

- During the maintenance inspection the above mentioned "safety instructions for repair" should be carried out The power supply and deflection circuitry on the chassis, the CRT panel and the neck of the CRT should be cleaned.

When cleaning the monitor on the outside:
- Always disconnect the monitor from the mains.
- Always use a damp AND NOT WET lint-free cloth.
- To clean the screen, apply a household glass cleaner to a cloth and then wipe the screen.
- Do not use solvents or abrasives on the monitor. It might discolour the cabinet and/or affect the anti glare treatment on your screen.

3. Warnings

3.1 In order to prevent damage to ICs and transistors, all high-voltage flash-overs must be avoided. In order to prevent damage to the picture tube, the method shown in Fig 3.1 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx 30s).

3. 2 ESD ⚠

All ICs and many other semiconductors are sensitive to electrostatic discharges (ESD). Careless handling during repair can drastically shorten the life. Make sure that during repair you are connected by a pulse band with resistance to the same potential as the earth of the unit. Keep components and tools also at this same potential.

3.3 Be careful when taking measurements in the high-voltage section and on the picture tube panel.

3.4 Never replace modules or other components while the unit is switched on.

3.5 When making settings, use plastic rather than metal tools. This will prevent any short-circuit and the danger of a circuit becomes unstable.

3.6 After repair the wiring should be fastened once more in the cable clamps for this purpose.

3.7 Together with the deflection unit the picture tube is used as an integrated unit. Adjustment of this unit during repair is therefore not recommended.

4. Notes

The semiconductors indicated in the circuit diagram(s) and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

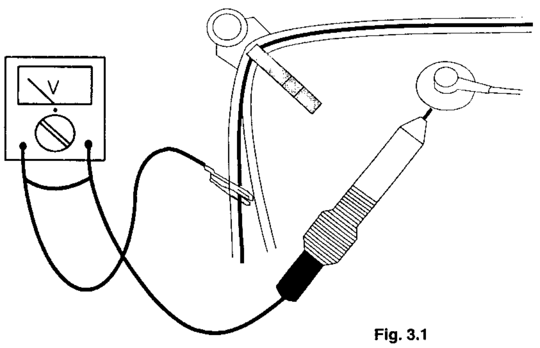


Fig. 3.1

Mechanical Instructions

0. General

To be able to perform measurements and repairs on the "circuit boards", these unit should placed in the service position first.

1.Remove the rear cover

-Remove right and left lib on the back cover
-Open 4 lids with "-" type screwdriver.
-Remove 4 screws at the bottom cabinet with "+" type screwdriver,refer fig 2.
-Remove out back cover.

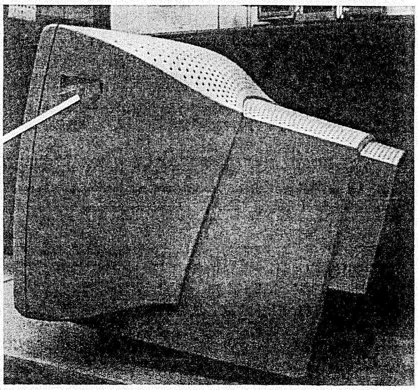
2. Video panel

a.Cutoff all wire cable ties
b.Remove GRD wire between video shield and CRT rack.
c.Remove 1 screw between mains board rack and video shield
d. cutoff 1 cable tie on LOT wire
e.Remove GRD wire (1604)from video PCB to CRT rack.

3. Main panel

- Disconnect the degaussing coil (1113)from Main panel.
- Remove the video panel from CRT.
- Remove the "screw" of I/F cable from Main panel.
- Disconnect the CRT ground "M312" from Video panel.
- Disconnect the Hi-Pot cap from CRT.
- Disconnect yoke wire from "M401".
- Disconnect concellation connector(1402).
- Slide the main panel out of bottom tray.
- Connect yoke wire to "M401".
- Connect concellation connector(1402).".
- Place Main panel in service position as shown in Fig.1.
- Mount Video panel again on CRT.
- To connect Hi-Pot cap again.
- To connect "M312" again.

4. service position



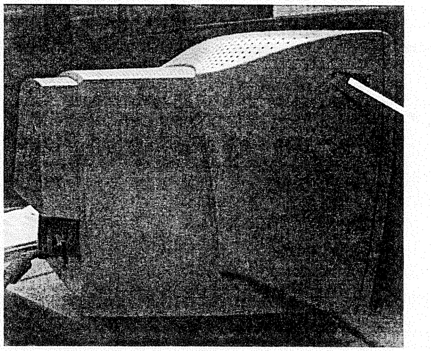


Fig.2

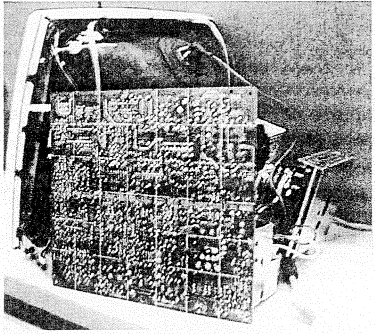


Fig.1

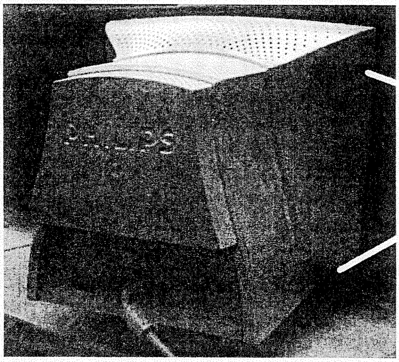


Fig.3

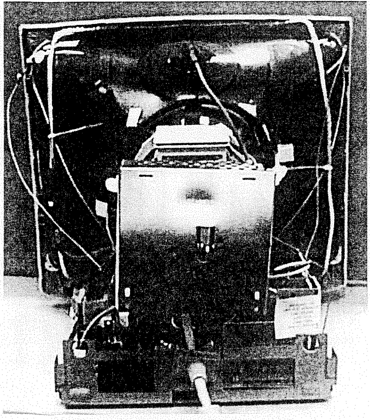
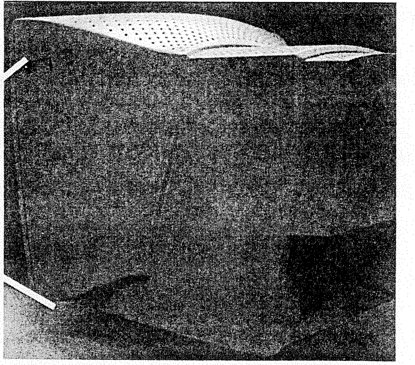
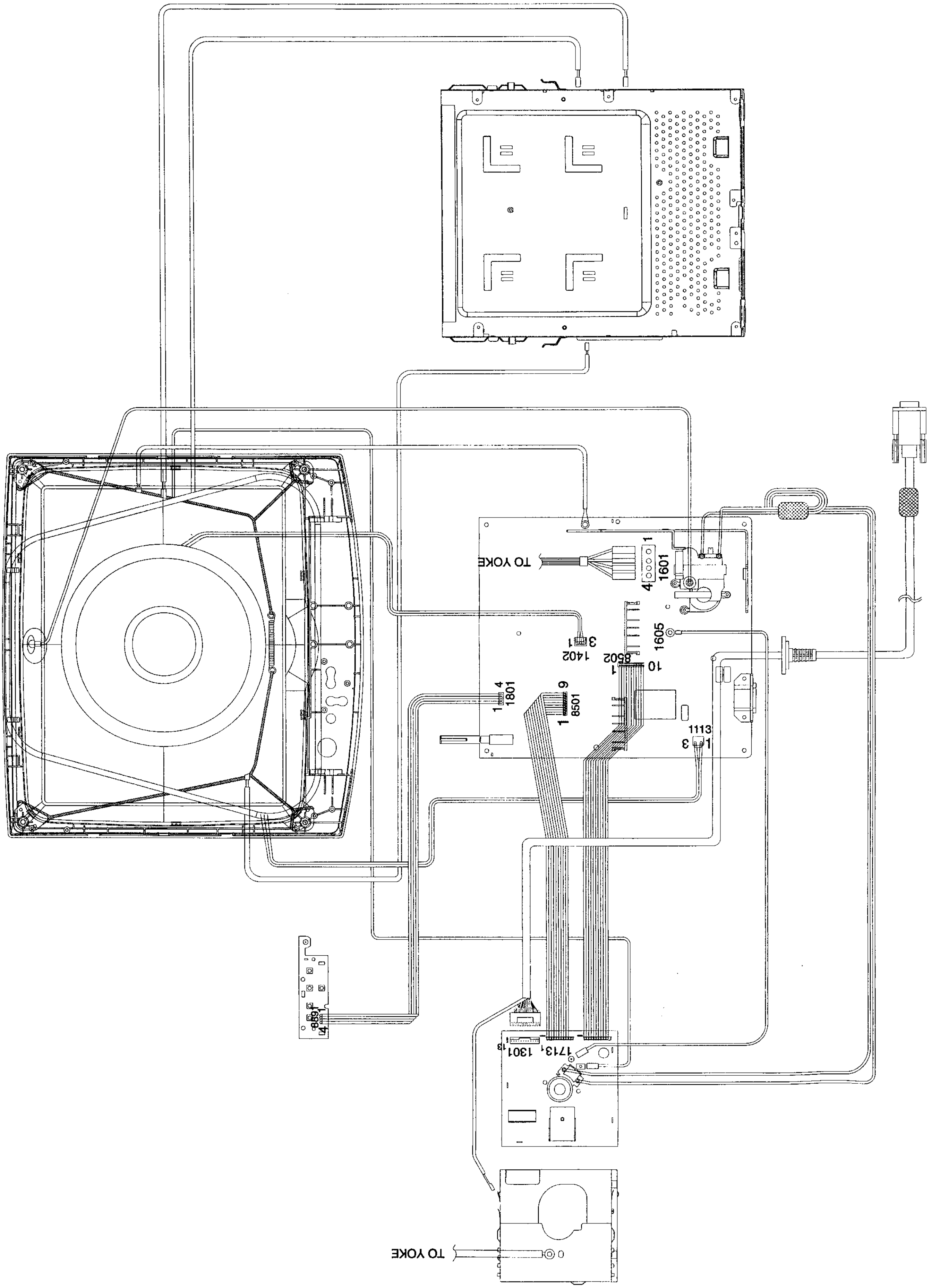


Fig.3



Wiring Diagram


TO YOKE
1601
1
4
1605
1402
3
1
8502
1
10
1801
4
1
8501
9
1
1113
3
1
1698
1
4
1713
1
1301
1
13
TO YOKE

Hex Data of DDC 1/2B

```
***********************************************************************
                    EDID log file
***********************************************************************
Vendor/Product Identification
          ID Manufacturer Name      : PHL
          ID Product Code           : 770C (HEX.)
          ID Serial Number          : 1234 (DEC.)
          Week of Manufacture       : 23
          Year of Manufacture       : 1999
EDID Version, Revision
          Version                   : 1
          Revision                  : 1

Basic Display Parameters/Features
          Video Input Definition    : Analog Video Input
                                      0.700V/0.000V (0.70Vpp)
                                      without Blank-to-Black Setup
                                      Separate Sync
                                      without Composite Sync
                                      without Sync on Green
                                        no Serration required

          Maximum H Image Size      : 31
          Maximum V Image Size      : 23
          Display Transfer Characteristic : 2.87
                    (gamma)
          Feature Support (DPMS)    :  Standby
                                       Suspend
                                        Active Off
          Display Type              : RGB color display
Color Characteristics
          Red   X coordinate        : 0.62
          Red   Y coordinate        : 0.345
          Green X coordinate        : 0.29
          Green Y coordinate        : 0.61
          Blue  X coordinate        : 0.155
          Blue  Y coordinate        : 0.065
          White X coordinate        : 0.283
          White Y coordinate        : 0.297

Established Timings
          Established Timings I
                                    : 720 x 400 @70Hz (IBM,VGA)
                                      640 x 480 @60Hz (IBM,VGA)
                                      640 x 480 @72Hz (VESA)
                                      640 x 480 @75Hz (VESA)
                                      800 x 600 @60Hz (VESA)

          Established Timings II    : 800 x 600 @72Hz (VESA)
                                      800 x 600 @75Hz (VESA)
                                      832 x 624 @75Hz (Apple,Mac II)
                                      1024 x 768 @60Hz (VESA)
                                      1024 x 768 @70Hz (VESA)
                                      1024 x 768 @75Hz (VESA)

          Manufacturer's timings    :
Standard Timing Identification #1
          Horizontal active pixels  : 640
          Aspect Ratio              : 4:3
          Refresh Rate              : 85

Standard Timing Identification #2
          Horizontal active pixels  : 800
          Aspect Ratio              : 4:3
          Refresh Rate              : 85

Standard Timing Identification #5
          Horizontal active pixels  : 640
          Aspect Ratio              : 4:3
          Refresh Rate              : 100
Standard Timing Identification #3
          Horizontal active pixels  : 1024
          Aspect Ratio              : 4:3
          Refresh Rate              : 85
Standard Timing Identification #4
          Horizontal active pixels  : 1280
          Aspect Ratio              : 5:4
          Refresh Rate              : 60
Standard Timing Identification #6
          Horizontal active pixels  : 800
          Aspect Ratio              : 4:3
          Refresh Rate              : 99
Standard Timing Identification #7
          Horizontal active pixels  : 1280
          Aspect Ratio              : 4:3
          Refresh Rate              : 60
Standard Timing Identification #8
          Horizontal active pixels  : 1152
          Aspect Ratio              : 4:3
          Refresh Rate              : 75
Detailed Timing #1
          Pixel Clock (MHz)         : 25.18
          H Active (pixels)         : 640
          H Blanking (pixels)       : 160
          V Active (lines)          : 350
          V Blanking (lines)        : 99
          H Sync Offset (F Porch) (pixels): 16
          H Sync Pulse Width (pixels) : 96
          V Sync Offset (F Porch) (lines) : 37
          V Sync Pulse Width (lines)  : 2
          H Image Size (mm)           : 306
          V Image Size (mm)           : 230
          H Border (pixels)           : 0
          V Border (lines)            : 0
          Flags                       : Non-interlaced
                                      : Normal Display, No stereo
                                      : Digital Separate sync.
                                      : Negative Vertical Sync.
                                      : Positive Horizontal Sync.
Monitor Descriptor #2

          Serial Number             : TY 123456

Monitor Descriptor #3

          Monitor Name              : PHILIPS 107S

Monitor Descriptor #4
          Monitor Range Limits
          Min. Vt rate Hz           : 50
          Max. Vt rate Hz           : 160
          Min. Horiz. rate kHz      : 30
          Max. Horiz. rate kHz      : 70
          Max. Supported Pixel      : 110

Extension Flag                      : 0
Check sum                           : AC (HEX.)
```

Hex Data of DDC 1/2B

```
*****************************************************************
                EDID data (for philips CRT)
*****************************************************************

  0: 00   1: ff    2: ff    3: ff    4: ff    5: ff    6: ff    7: 00
  8: 41   9: 0c   10: 0c   11: 77   12: d2   13: 04   14: 00   15: 00
 16: 17  17: 09   18: 01   19: 01   20: 68   21: 1f   22: 17   23: bb
 24: e8  25: d5   26: f8   27: 9e   28: 58   29: 4a   30: 9c   31: 27
 32: 10  33: 48   34: 4c   35: ad   36: ee   37: 00   38: 31   39: 59
 40: 45  41: 59   42: 61   43: 59   44: 81   45: 80   46: 31   47: 68
 48: 45  49: 67   50: 81   51: 40   52: 71   53: 4f   54: d6   55: 09
 56: 80  57: a0   58: 20   59: 5e   60: 63   61: 10   62: 10   63: 60
 64: 52  65: 08   66: 32   67: e6   68: 10   69: 00   70: 00   71: 1a
 72: 00  73: 00   74: 00   75: ff   76: 00   77: 20   78: 54   79: 59
 80: 20  81: 20   82: 31   83: 32   84: 33   85: 34   86: 35   87: 36
 88: 0a  89: 20   90: 00   91: 00   92: 00   93: fc   94: 00   95: 50
 96: 48  97: 49   98: 4c   99: 49  100: 50  101: 53  102: 20  103: 31
104: 30 105: 37  106: 53  107: 0a  108: 00  109: 00  110: 00  111: fd
112: 00 113: 32  114: a0  115: 1e  116: 46  117: 0b  118: 00  119: 0a
120 : 00 121: 20 122: 20  123: 20  124: 20  125: 20  126: 00  127: ac
```

*note: Address 78 & 79 for factory code:
For example : fill in "54" & "59" at address 78 & 79, it stands for "TY".
fill in "48" & "43" at address 78 & 79, it stands for "HC".

Factory code for each site is as below.

Brazil	H C (48h, 43h)
Chungli	T Y (54h, 59h)
Delta	G K (47h, 4Bh)
Juarez	Y A (59h, 41h)
Shenzshen	C X (43h, 58h)
Suzhou	B Z (42h, 5Ah)
Szombathely	H D (48h, 44h)

serial no. address : 82, 83, 84, 85, 86, 87, 88, 89
There are two format (PHILIPS Brand & PCEC model) for :

Monitor Descriptor #2
Serial Number:

```
 ☐ TY (or HC, YA, BZ ... etc) ☐☐ SSSSSS    ----- for PHILIPS Brand
 ☐ BZ (or TY, HD, HC ... etc) ☐☐ SSSSSSSS  ----- for PCEC model
 ↑                            ↑ ↑
blank                     blank blank
```

S: stands for "serial number"

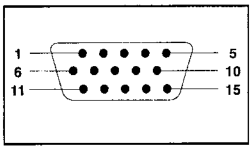
DDC Instructions

This [DDC Module (DDC cable)= 4822 320 12004(=4822 724 27550)] and
[DDC V2(DDCV2U.EXE) software(3.5" disk)=4822 711 00024(= 4822 724 27560)]
are used for "BU Monitor - Chungli product range" which incorporates a DDC1/DDC2B function that allows bi-directional communication between the monitor and PC system for optimal video configuration.
[July 01 1997, Revision 2.0] ,which upgrades the software and service information(4822 727 21027 & 4822 727 21038) , is fully compatible with previous one.

Additional information :
Additional information about DDC (Display Data Channel) may be obtained from Video Electronics Standards Association (VESA). Extended Display Identification (EDID) information may be also be obtained from VESA.

Pin assignment

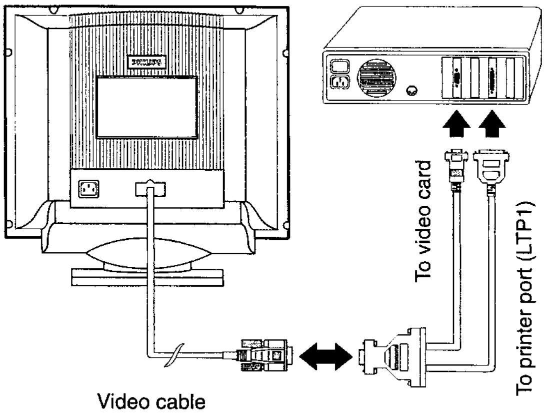
The 15-pin D-sub connector (male) of the signal cable (3 rows) for DDC feature :



Pin No.	Assignment	Pin No.	Assignment
1	Red video input	9	No pin
2	Green video input	10	Logic ground
3	Blue video input	11	Identical output connected to pin 10
4	Identical output connected to pin 10	12	Serial data line (SDA)
5	Ground	13	H.sync
6	Red video ground	14	V. sync (VCLK for DDC)
7	Green video ground		
8	Blue video ground	15	Data clock (SCL)

Connection

(Rear of the monitor)



DDC data re-programming

1. General
   In case the DDC data memory IC, replaced due to a defect the data contents of this IC have to be re- programmed via a PC.
   In case of replacement of the video (or deflection) board it is advised to re-soldered DDC IC from the old board onto the new board, in this case the IC dose not need to be re-programmed.

2. DDCV2N.EXE can be used for :
   EDID Structure Version/Revision

Version : 1
Revision : 0
(text file)

and

Version : 1
Revision : 1
(.hex file)

DDC Reprogramming Instructions (for PHILIPS models)

System Requirements

DDC Module (DDC cable), P/N = 4822 320 12004
An Intel 386 (or above) PC or compatible
DOS 6.0 or above
DDCV2N.EXE software

Procedure

Connect DDC Cable between PC and Monitor.
Turn on Monitor and PC.
Access Factory Mode of monitor.
Verify Factory Mode by OSD function of monitor.
Insert diskette in Drive a: Select Run "DDCV2N.EXE" under DOS or Win.
Verify the data and version of DDC application software.

It should be : March 15 1999
Revision 3.0

Press "Enter" at the introduction screen

Menu Configuration:

File	**R/W**	**Setup**	**Quit**
Load EDID	Write EDID to EEPROM	Options	
Load txt file (V1.0)	Read From EEPROM	Barcode format	
Save EDID	Edit EDID Code		
Save txt File	Auto Scan		
Convert EDID Code			
Os shell			
Exit			

General :

1. How to change drive

① Use arrow keys to highlight "Options" under the Setup menu, press "Enter".
② Press "F2", then press "ESC", fill in "A" or "C".
[(If your .HEX files for different Model numbers in drive "A", then fill in "A").,
(If your .HEX files for different Model numbers in drive "C", then fill in "C").
Normally, to read DDC data from EEPROM of Monitor is enough.]
③ Press "Enter", then press "ESC"

2. How to select .HEX files for different Model numbers **example:**

① Use arrow keys to highlight "Load EDID" under the File menu, press "Enter"
② Bring up PHILIPS\ press "Enter"
③ Bring up ..\
107S GSIII ← select, press "Enter"
④ Bring up ..\ at this highlight area, press "Enter", then go back to last screen
74C.HEX ← select for 107S GSIII/00C

How to write DDC hex files to Monitor

① Use arrow keys to highlight "Options" under the Setup menu, press "Enter"

② Tab down to ID Serial Number, use down arrow key to place the asterisk (*) beside "store in DEC with LSB first". Press "control/enter" to save.
(Ensure the top asterisk (*) is beside in store in HEX with LSB first.)

③ Use arrow keys to highlight "Load EDID" under the file menu, press "Enter".

④ Use arrow keys to highlight "PHILIPS\", Press "Enter".

⑤ Use arrow keys to highlight "the model list under subdirect", press "Enter".

⑥ Use arrow keys to highlight "Write EDID to EEPROM" under the R/W menu, press "Enter".

⑦ Use arrow keys to highlight "Read from EEPROM" under the R/W menu, press "Enter".

⑧ Use arrow keys to highlight "Edit EDID Code" under the R/W menu, press "Enter".

⑨ Verify the ID Serial number on the screen matches the serial number of the unit.

⑩ Verify EDID Structure Version is "Version :2, Revision :1

⑪ Press "ESC"

⑫ Use arrow keys to highlight "Quit", Press "Enter".

Menu Configuration:

File	R/W	Setup	Quit
Load EDID	Write EDID to EEPROM	Options	
Load txt file (V1.0)	Read From EEPROM	Barcode format	
Save EDID	Edit EDID Code		
Save txt File	Auto Scan		
Convert EDID Code			
Os shell			
Exit			

DDC Instructions (Continued)

How to change the Year, Week & Serial number of Monitor (for PHILIPS models)

① Use arrow keys to highlight "Barcode format", under the Setup menu, press "Enter".

② Bring up :

```
Barcode example      : 9926000114     <—Fill in 9926000114, press "Enter"
Barcode format       : YYWWSSSSSS     <—Fill in YYWWSSSSSS, press "Enter"
-------------------------------------------------------
```

③ continued:

```
Barcode example      : 9926000114
Barcode format       : YYWWSSSSSS
-------------------------------------------------------
Manufacture Year     : 1999
Manufacture Week     : 14
Serial No.           : 000114
Serial No. ASCII     : _TY__000114
==================================
                              press "space"
EDID [16]    Week    : 10
EDID [17]    Year    : 09 [Year-1990]
EDID [12..15]        : 00000072
EDID [77 -89]        : . .   □□□□□□
data correct ? (Y/N) Y                      <— Fill in "Y", don't press "Enter"
```

Factory code for each site is as below.

Brazil	H C (48h,43h)
Chungli	T Y (54h,59h)
Delta	G K(47h,4Bh)
Juarez	Y A(59h,41h)
Shenzshen	C X(43h,58h)

There is a description at the lower of the screen for Barcode format as below.

Barcode format : Y,W,S,X,- (year,week,s/no,ignore,fixed)

Y stands for "year".
W stands for "week".
S stands for "s/no (serial number)".
X stands for "ignore". Allow user to fill in any 'character' or 'numeric'.
- stands for "fixed". User have to fill in Special 'character' or 'numeric' for "AutoScan" if user fill in '-' at "Barcode format :".

④ Use arrow keys to highlight "Auto Scan" under the R/W menu, press "Enter".

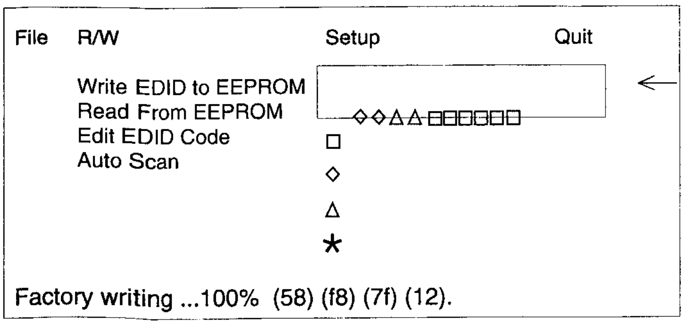
⑤ Bring up: Auto Scan ◇◇△△□□□□□□ ← year, week, serial number can be changed.

□Serial Number
◇Year Code
△Week Code
*don't care

(If monitor is not at Factory Mode, access Factory Mode at this moment.)

⑥ Fill in "Barcode data (for instance: 9926000114)" beside AutoScan, press "Enter".

After 10 seconds around, bring up:



```
File   R/W                      Setup            Quit

       Write EDID to EEPROM                            <—
       Read From EEPROM        ◇◇△△□□□□□□
       Edit EDID Code          □
       Auto Scan               ◇
                               △
                               *

Factory writing ...100%  (58) (f8) (7f) (12).
```

⑦ Press "ESC" "ESC", return to R/W menu.

⑧ Select "Edit EDID code", press "Enter".

⑨ Verify "ID Serial No."............

Turn off monitor, then turn on monitor again.

① Press OSD button, select "MONITOR STATUS", press OSD button again.
② Verify "SERIALNO".

(Leave OSD function).

③ Use arrow keys to highlight "QUIT", press "Enter".

0. General

When carry-out the electrical settings in many cases a video signal must be applied to the monitor. A computer with :

- ATI GPT-1600 (4822 397 10065), Mach 64 (up to 107kHz)

are used as the video signal source. The signal patterns are selected from the "service test software" package, see user guide 4822 727 21046 (GPT-1600).

0.1 This monitor has 8 factory-preset modes as below.

720 x 400 31.5 kHz/70 Hz
640 x 480 31.5 kHz/60 Hz
640 x 480 43.0 kHz/85 Hz
800 x 600 46.9 kHz/75 Hz
800 x 600 53.6 kHz/85 Hz
1024x768 60.0 kHz/75 Hz
1280 x 1024 64.0kHz/60Hz
1024 x 768 68.7 kHz/85 Hz

14 factory-preload modes as below

640 x 350 31.5 kHz/70 Hz
640 x 350 37.8 kHz/85 Hz
640 x 480 37.5 kHz/75 Hz
640 x 480 37.8 kHz/72 Hz
640 x 480 50.5 kHz/100 Hz
720 x 400 38.0 kHz/85 Hz
800 x 600 37.90kHz/60Hz
800 x 600 48.0 kHz/72 Hz
800 x 600 64.0 kHz/100 Hz
832 x 624 49.7 kHz/75 Hz
1024 x 768 48.3 kHz/60 Hz
1024 x 768 56.5 kHz/70 Hz
1152 x 864 67.5 kHz/75 Hz
1280 x 960 60.0 kHz/60 Hz

0.2 With normal VGA card:
If not using the ATI card during repair or alignment, The service engineer also can use this service test software adapting with normal standard VGA adaptor and using standard VGA mode 640 x 480, 31.5 kHz/60 Hz (only) as signal source.

0.3 AC/DC Measurement:
The measurements for AC waveform and DC figure is based on 640 x 480 31.5 kHz/60 Hz resolution mode with test pattern "gray scale". Power input: 110V AC

1. B+ supply voltage (3145) 83Vdc

- Apply a video signal in the 640 x 480 with 31.5 kHz/60Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Pre-set trimming potentiometer 3145(+) and 3561(EHT) in mid-position.
- Set Vg2 (screen) to fully Counter-clockwise (zero beamcurrent).
- Connect a dc voltmeter between the joint of capacitor 2151 and ground (common ground).
- Set the B+ trimming potentiometer 3145 so that the reading on the dc voltmeter is 83 V +/- 0.2 Vdc.

2. High-voltage EHT (3561)

- Apply a video signal in the 640 x 480 with 31.5 kHz/60Hz mode.
- Select the "cross-hatch" pattern.
- Set the brightness control and the contrast control to the minimum position.
- Turn off the power.
- Connect a dc voltmeter between the joint of capacitor c2601 and ground (common ground).
- Turn on the power.
- Set the EHT trimming potentiometer 3561 so that the reading on the dc voltmeter is 67.0V+/- 0.2V for (CPT LDF CRT)

3.Monitor the following auxiliary voltages.

SOURCE ACROSS 7114 Pin and GRN	+5 V	+/- 0.25 VDC
SOURCE ACROSS C2155	-6.1 V	+/- 0.3 VDC.
SOURCE ACROSS C2141	+8.0 V	+/- 0.4 VDC.
SOURCE ACROSS C2153	+13.1V	+/- 1.0 VDC.
SOURCE ACROSS C2154	- 13.1V	+/- 1.0 VDC.
SOURCE ACROSS C2151	+83.0V	+/- 1.0 VDC.
SOURCE ACROSS C2609	- 178 V	+/- 8.0 VDC.
SOURCE ACROSS C2152(+ to Gnd)	+180.0V	+/-2.0 VDC.

4. General conditions for alignment

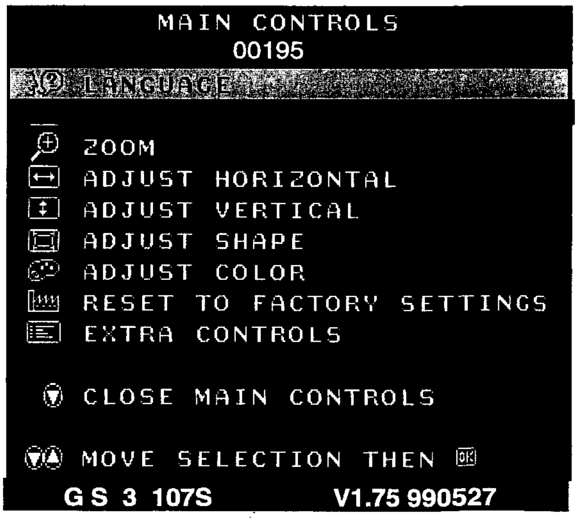
4.1 During all alignments, supply a distortion free AC mains voltage to set via an isolating transformer with low internal impedance.
4.2 Align in pre-warmed condition, at least 30 minutes warm-up with nominal picture brightness.
4.3 Purity, geometry and subsequent alignments should be carried out in magnetic cage with correct magnetic field.

Northern hemisphere : H=0, V=450 mG, Z=0
Southern hemisphere : H=0, V=-500 mG, Z=0
Equatorial Support : H=0, V=0 mG, Z=0

4.4 All voltages are to be measured or applied with respect to ground.
Note: Do not use heatsink as ground.
4.5 Adjust brightness controls to center position except for contrast control which should be set to MAX.

5. To access factory mode:

- Turn off monitor (don't turn off PC)
- Press " ◀▶ " and " ⏻ " simultaneously on the front control panel ,then press " ● ",wait till the OSD menu with characters " factory mode (below OSD menu)" come on the screen of monitor.



- If OSD menu disappears on the screen of monitor, press " ● " again (anytime), then the OSD menu comes on the screen again.
- using " ▲▼ " : to select OSD menu.
- using " ◀▶ " : to increase or decrease the setting.
(Please also refer to page 8 to page 15 for OSD adjustment)
- Using " ● " to confirm the selection.

5.1. To leave factory mode

* After alignment of factory mode, turn off monitor (if you do not turn off monitor, the OSD menu is always at the factory mode), then turn on monitor again (at this moment, the OSD menu goes back to user mode).

Electrical Adjustments (Continued)

6. Picture geometry setting

- Apply a video signal with cross-hatch pattern.
- Apply a video signal in the 1024 x 768 with 68.7 kHz/85 Hz mode.
- Set contrast control at Max. position, and brightness control in the mid-point.

6.4 Alignment of horizontal geometry and vertical geometry
6.4.1 Adjust the H-width to 306 mm
6.4.2 Adjust the H-phase to center position.
6.4.3 Adjust V-size to 230mm.
6.4.4 Adjust V-Position to center.
Adjust/Trapezium/pincushion
6.4.5 Adjust picture tilt via I'C BUS for correct top/bottom lines.
6.4.6 Adjust the top and bottom corner by I'C to straight vertical lines of the left and right edge.
6.4.7 Adjust the parallelogram by I'CBUS to get optimum vertical line.
6.4.8 Adjust the unbalance pin by I'C BUS to get optimum vertical line.
6.4.9 Adjust the unbalance Vertical linearity balance by I'C BUS to get optimum vertical linearity balance.
6.4.10Adjust the unbalance Vertical linearity by I'C to get optimum vertical linearity.
6.5 Adjust size/centering/trapezium/pincushion/parallelogram of all other preset modes (TABLE1-TABLE8) via I'C bus.
6.6 Preset factory preload timin TABLE9-TABLEE22 according to step 6.5 values.

7. Alignment of Vg2 cut-off point, white tracking

Equipment : 1. Video Test Generator-801GC (Quantum Data)
2. Color-analyzer (Minolta CA-100)
VG2 [(screen), at the bottom of the L.O.T.].

- * Apply a video signal in the 1024 x 768 with 68.7 kHz/85 Hz mode, select the "full white pattern" (sizes 306 x 230 mm).
- * Use color-analyzer (Minolta CA-100) to adjust cutoff and white uniformity.

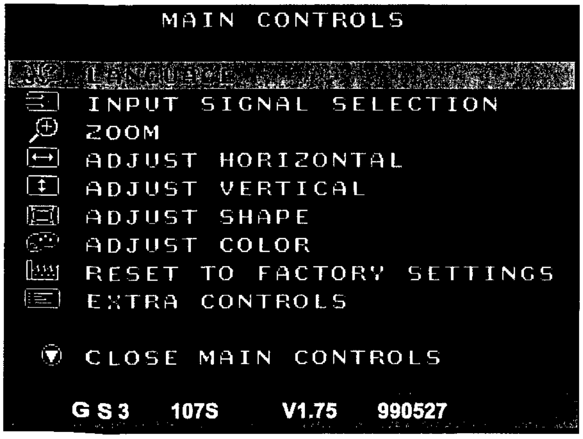
OSD R/G/B cut-off and R/G/B gain can be accessed, with initial data:

9300°K
R cutoff = 25%, R gain = 65% (I'C)
G cutoff = 25%, G gain = 65% (I'C)
B cutoff = 25%, B gain = 65% (I'C)

6500°K
R cutoff = 25%, R gain = 55% (I'C)
G cutoff = 25%, G gain = 55% (I'C)
B cutoff = 25%, B gain = 55% (I'C)

Brightness = 50%, Sub-Contrast = 85%, ABL = 50% (I'C)

Step 1: To press power button switch ◉ and left & right ◀▶ simulaneously to entert the character "FACTORY MODE" as shown in Fig.2.1, press " ● " to access the OSD menu for R/G/B gain & cutoff as shown in Fig. 2.2.
Step 2: Press " ▲▼ " for function selection as shown in Fig. 2.2.



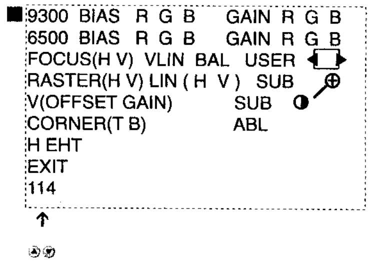

9300 BIAS R G B GAIN R G B
6500 BIAS R G B GAIN R G B
FOCUS(H V) VLIN BAL USER ◀□▶
RASTER(H V) LIN (H V) SUB ⊕
V(OFFSET GAIN) SUB ◐
CORNER(T B) ABL
H EHT
EXIT
114
▲▼

Fig. 2.2

BIAS R G B	R(red) G(green) B(blue) cutoff
GAIN R G B	R(red) G(green) B(blue) gain
V FOCUS	Vertical Focus
VLIN BAL	Vertical Linearity Balance
USER ◀□▶	Horizontal size range
RASTER H	Horizontal DC (raster) Shift
RASTER V	Vertical DC (raster) Shift
HLIN	Horizontal Linearity
V LIN	Vertical Linearity
SUB ⊕	Zoom range
SUB ◐	Sub Contrast
V OFFSET	Vertical offset
V GAIN	Vertical Gain
ABL	Auto Beam Limit
T CORNER	Corner Correctionof TOP
B CORNER	Corner Correctionof BOTTOM
H EHT	Horizontal Extensive High Tension

7.2 Connect the video input, set brightness control at center, and contrast control at maximum
7.3
set R,G,B cut-off at 127 9300k and 6500K(EEPROM preload value)
R,G,B gain at 180 9300k and 6500K(EEPROM preload value)
ABL at 127 9300k and 6500K(EEPROM preload value)
SUB-CON at 218 (EEPROM preload value)
7.4 Adjust 9300K color:
With the help of a factory calibrated color analyzer CA 100
set low R,G,B scale 100=0.12FL,x=283,y=297
Adjust Vg1 until brightest gun at 100 on low brightness scale.
7.5 Adjust R,G,B cut-off for all gun reading to get 100 on low brightness scale.

7.5 Adjust R,G,B cut-off for all gun reading to get 100 on low brightness scale.
7.6 Set Ca100 high R,G,B scale 100 = 41+/- 1FL,X=283,y=297
Adjust G gain at 100 scale on high brightness scale.
7.7 Adjust R,B gain so that blue and green havng as red on the high brightness scale
7.8 Set contrast at minimum and repeat 7.5,7.6,7.7,until RGB three guns get same readings on low and high brightness scale.
7.9 Adjust 6500K color:
With the help of a factory calibrated color analyzer CA 100
set low R,G,B scale 100=0.12FL,x=313,y=329
Adjust Vg1 until brightest gun at 100 on low brightness scale.
7.10 Adjust R,G,B cut-off for all gun reading to get 100 on low brightness scale.
7.11 Set CA100 high R,G,B scale 100 = 41+/- 1FL,X=313,y=329
Adjust G gain at 100 scale on high brightness scale.
7.12 Adjust R,B gain so that blue and green have the same reading as red on the high brightness scale
7.13 Set contrast at minimum and repeat 7.10,7.11,7.12,until RGB three guns get same readings on low and high brightness scale.
7.14 Adjust SUB-CON to get Y=41+/-1FL.
7.15 Apply full white pattern, adjust ABL to reach 30 +/- 1FL(C MAX.)
7.16 Check full white at contrast and brightness at minimum, the foreground shall be extinguished.

8. Focus adjustment

Apply a signal of " @ " character. at 68.7 kHz/85 Hz mode set the brightness to mid-position , contrast to max - position and adjust the focus for optimal sharpness in the area within 2/3 from the screen center.

9. Loading DDC code

The DDC HEX data should be written into the EEPROM (7803,7804) by EEPROM writer or equivalent method.

a: Service DDC Kit
DDC Module (DDC cable), Part number = 4822 320 12004
DDCV2u.EXE software (3.5" disk), Part number = 4822 711 00024
b: Please refer to Service information 4822 727 21995 for using the Service DDC Kit.

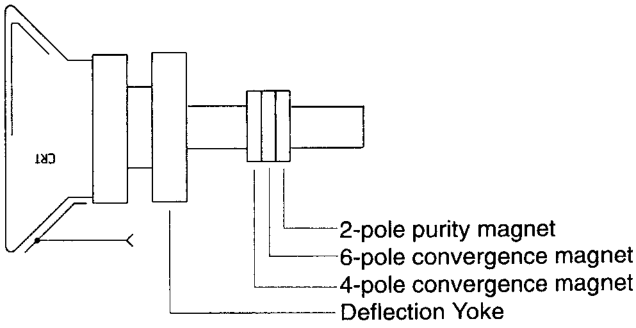
10. Purity adjustment

- Make sure the monitor is not exposed to any external magnetic field.
- Produce a full red pattern on the screen, adjust the purity magnet rings on the PCM assy (on CRT) to obtain a complete field of the color red. This is done by moving the two tabs (2-pole) in such a manner that they advance in an opposite direction but at the same time to obtain the same angle between the two tabs, which should be approximately 180 degree.
- Check by full green pattern and full blue pattern again to observe their respective color purity.

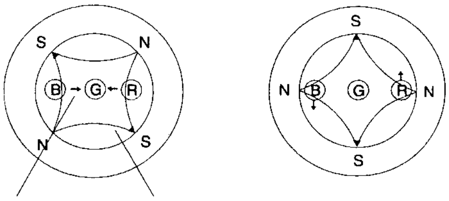
11. Static convergence

Introduction
Slight deviation in the static convergence can be corrected by using two permanent pairs of magnets which are fitted around the neck of the CRT. These are the 4-pole magnet and the 6-pole magnet.
The 4-pole magnet move the outermost electron beams (R and B) parallel in the opposite direction from the other. The 6-pole magnet moves the outermost electron beam (R, B and G) parallel in the opposite direction from the other.
The magnetic field of the above magnets do not affect the center of the CRT neck.

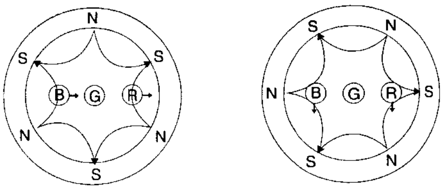
Setting
- Before the static convergence setting can be made, the monitor must be switched on for 30 minutes.
- The focus setting must be made correctly.
- Signal: 640 * 480, 31.5 kHz/60 Hz mode.
- Set the tabs of the 4-pole magnet in the neutral position. This is when the tabs are opposite one another. In this position the magnets do not affect the deflection of the R and B electron beams.
- Set the tabs of the 6-pole magnet in the neutral position. This is when the tabs are opposite one another. In this position the magnets do not affect the deflection of the R, B, and G electron beams.
- First set the 4-pole magnet optimally.
- Then set the 6-pole magnet optimally.
- If the convergence is not now optimal, then adjust to the optimal setting with the 4-pole magnet and then with the 6- Pole magnet again.
- Set the tabs of the 6-pole magnet in the neutral position. This is when the tabs are opposite one another. In this position the magnets do not affect the deflection of the R, B, and G electron beams.
- First set the 4-pole magnet optimally.
- Then set the 6-pole magnet optimally.
- If the convergence is not now optimal, then adjust to the optimal setting with the 4-pole magnet and then with the 6- pole magnet again.



4-pole Beam motion producced by the 4-pole convergence magnet



6-pole Beam motion producced by the 6- pole convergence magnet



All units that are returned for service or repair must pass the original manufactures safety tests. Safety testing requires both **Hipot** and **Ground Continuity** testing.

HI-POT TEST INSTRUCTION

1. Application requirements

1.1 All mains operated products must pass the Hi-Pot test as described in this instruction.

1.2 This test must be performed again after the covers have been refitted following the repair, inspection or modification of the product.

2. Test method

2.1 Connecting conditions

2.1.1 The test specified must be applied between the parallel-blade plug of the mainscord and all accessible metal parts of the product.

2.1.2 Before carrying out the test, reliable conductive connections must be ensured and thereafter be maintained throughout the test period.

2.1.3 The mains switch(es) must be in the "ON" position.

2.2 Test Requirements

All products should be HiPot and Ground Continuity tested as follows:

Condition	HiPot Test for products where the mains input range is Full range(or 220V AC)	HiPot Test for products where the mains input is 110V AC(USA type)	Ground Continuity Test requirement
Test voltage	2820VDC (2000VAC)	1700VDC (1200VAC)	Test current: 25A,AC Test time: 3 seconds(min.) Resistance required: <=0.09+R ohm, R is the resistance of the mains cord.
Test time (min.)	3 seconds	1 second	
Trip current (Tester)	set at 100 uA for Max. limitation; set at 0.1 uA for Min. limitation	5 mA	
Ramp time	set at 2 seconds		

2.2.1 The minimum test duration for Quality Control Inspector must be 1 minute.

2.2.2 The test voltage must be maintained within the specified voltage + 5%.

2.2.3 There must be no breakdown during the test.

2.2.4 The grounding blade or pin of mains plug must be conducted with accessible metal parts.

3. Equipments and Connection

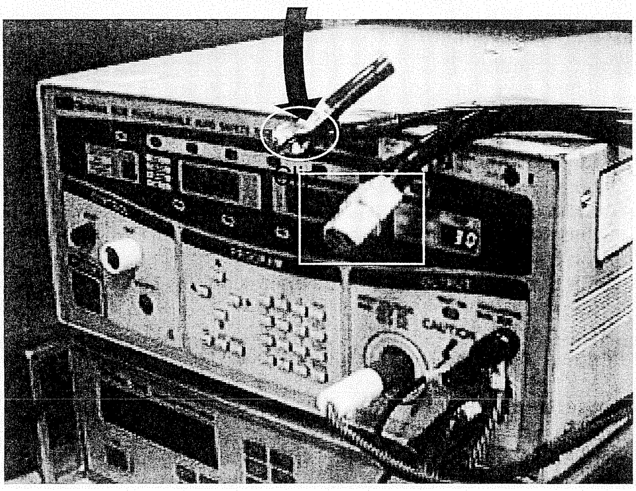
3.1. Equipments

For example :

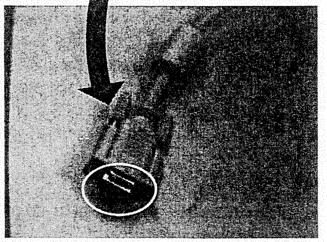
- ChenHwa 9032 PROGRAMMABLE AUTO SAFETY TESTER
- ChenHwa 510B Digital Grounding Continuity Tester
- ChenHwa 901 (AC Hi-pot test), 902 (AC, DC Hi-pot test) Withstanding Tester

3.2. Connection

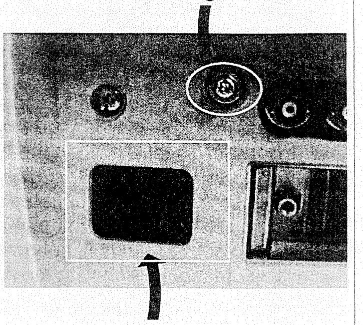
* Turn on the power switch of monitor before Hipot and Ground Continuity testing.



(ChenHwa 9032 tester)



Connect the "video cable" or "grounding screw" to the CLIP on your tester.



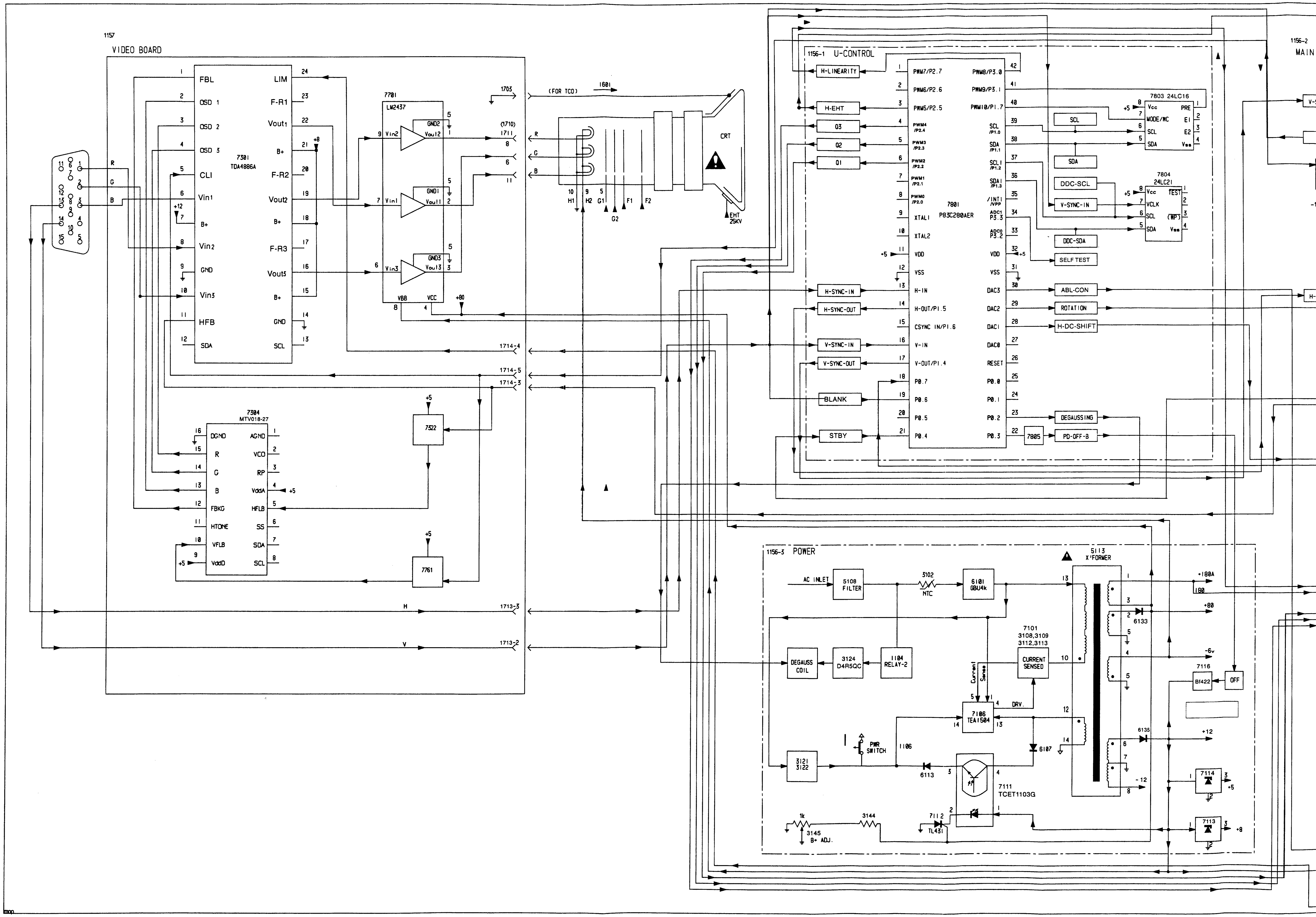
Connect the power cord to the monitor.

(Rear view of monitor)

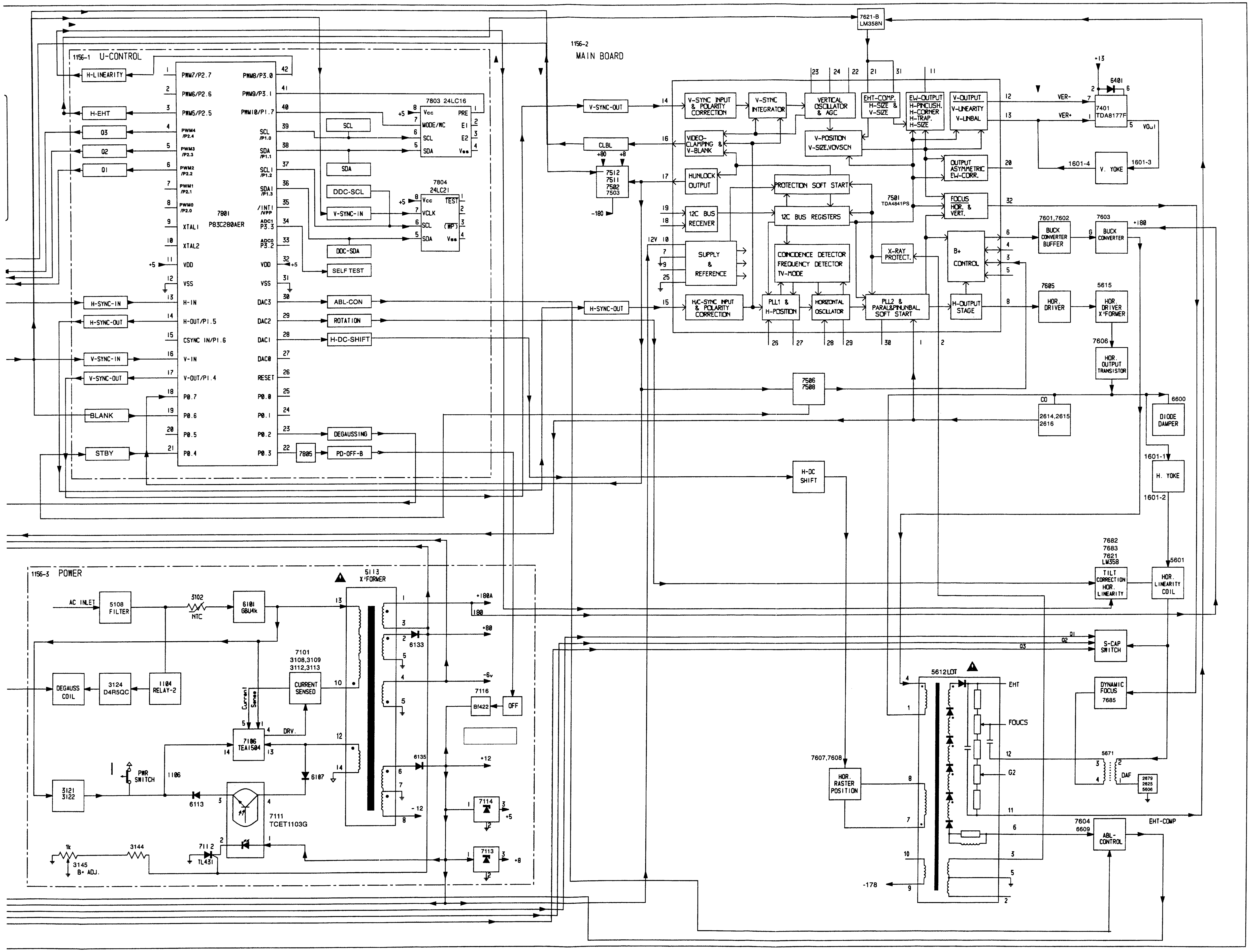
4. Recording

Hipot and Ground Continuity testing records have to be kept for a period of 10 years.

Block diagram

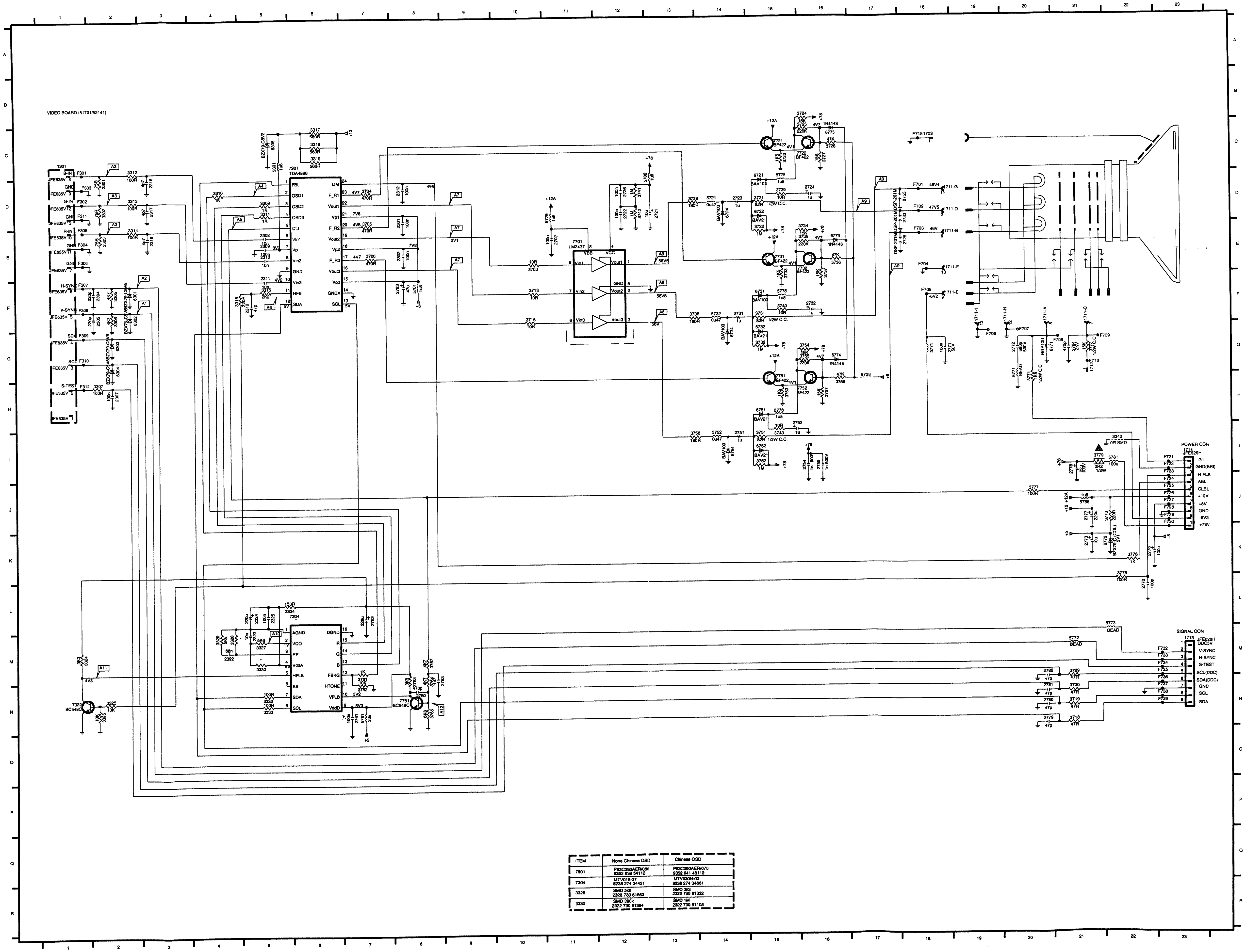

1157
VIDEO BOARD
7301
TDA4886A
FBL
OSD 1
OSD 2
OSD 3
CLI
Vin1
B+
Vin2
GND
Vin3
HFB
SDA
LIM
F-R1
Vout1
B+
F-R2
Vout2
B+
F-R3
Vout3
B+
GND
SCL
+12
+8
7701
LM2437
Vin2
Vout2
GND2
Vin1
Vout1
GND1
Vin3
Vout3
GND3
VBB
VCC
+80
1703
(FOR TCO)
1601
(1710)
1711
R
G
B
H1
H2
G1
G2
F1
F2
CRT
EHT
25KV
1714-4
1714-5
1714-3
7304
MTV018-27
DGND
R
G
B
FBKG
HTONE
VFLB
VddD
AGND
VCO
RP
VddA
HFLB
SS
SDA
SCL
+5
7322
7761
H
V
1713-3
1713-2
1156-1 U-CONTROL
H-LINEARITY
H-EHT
O3
O2
O1
7801
P83C280AER
PWM7/P2.7
PWM6/P2.6
PWM5/P2.5
PWM4 /P2.4
PWM3 /P2.3
PWM2 /P2.2
PWM1 /P2.1
PWM0 /P2.0
XTAL1
XTAL2
VDD
VSS
H-IN
H-OUT/P1.5
CSYNC IN/P1.6
V-IN
V-OUT/P1.4
P0.7
P0.6
P0.5
P0.4
PWM8/P3.0
PWM9/P3.1
PWM10/P1.7
SCL /P1.0
SDA /P1.1
SCL1 /P1.2
SDA1 /P1.3
/INT1 /VPP
ADC1 P3.3
ADC0 P3.2
VDD
VSS
DAC3
DAC2
DAC1
DAC0
RESET
P0.0
P0.1
P0.2
P0.3
H-SYNC-IN
H-SYNC-OUT
V-SYNC-IN
V-SYNC-OUT
BLANK
STBY
SCL
SDA
DDC-SCL
V-SYNC-IN
DDC-SDA
SELF TEST
ABL-CON
ROTATION
H-DC-SHIFT
DEGAUSSING
7805
PD-OFF-B
7803 24LC16
Vcc
MODE/WC
SCL
SDA
PRE
E1
E2
Vss
7804
24LC21
Vcc
VCLK
SCL
SDA
TEST
(WP)
Vss
1156-2
MAIN
1156-3 POWER
AC INLET
5108
FILTER
3102
NTC
6101
GBU4k
5113
X'FORMER
7101
3108,3109
3112,3113
CURRENT SENSED
Current Sense
DRV.
7106
TEA1504
DEGAUSS COIL
3124
D4R5QC
1104
RELAY-2
3121
3122
PWR SWITCH
1106
6113
6107
7111
TCET1103G
7112
TL431
1k
3145
B+ ADJ.
3144
6133
6135
+180A
180
+80
-6v
7116
BI422
OFF
+12
-12
7114
+5
7113
+8

CM26_FLMINGO_11951


1156-1 U-CONTROL
H-LINEARITY
H-EHT
03
02
01
H-SYNC-IN
H-SYNC-OUT
V-SYNC-IN
V-SYNC-OUT
BLANK
STBY
7801
P83C280AER
PWM7/P2.7
PWM6/P2.6
PWM5/P2.5
PWM4 /P2.4
PWM3 /P2.3
PWM2 /P2.2
PWM1 /P2.1
PWM0 /P2.0
XTAL1
XTAL2
VDD
VSS
H-IN
H-OUT/P1.5
CSYNC IN/P1.6
V-IN
V-OUT/P1.4
P0.7
P0.6
P0.5
P0.4
PWM8/P3.0
PWM9/P3.1
PWM10/P1.7
SCL /P1.0
SDA /P1.1
SCL1 /P1.2
SDA1 /P1.3
/INT1 /VPP
ADC1 P3.3
ADC0 P3.2
VDD
VSS
DAC3
DAC2
DAC1
DAC0
RESET
P0.0
P0.1
P0.2
P0.3
+5
SCL
SDA
DDC-SCL
V-SYNC-IN
DDC-SDA
SELF TEST
ABL-CON
ROTATION
H-DC-SHIFT
DEGAUSSING
7805
PD-OFF-B
7803 24LC16
Vcc
MODE/WC
SCL
SDA
PRE
E1
E2
Vss
7804
24LC21
Vcc
VCLK
SCL
SDA
TEST
(WP)
Vss
1156-2
MAIN BOARD
V-SYNC-OUT
CLBL
+80
+8
7512
7511
7502
7503
-180
H-SYNC-OUT
7621-B
LM358N
V-SYNC INPUT & POLARITY CORRECTION
V-SYNC INTEGRATOR
VERTICAL OSCILLATOR & AGC
EHT-COMP. H-SIZE & V-SIZE
EW-OUTPUT H-PINCUSH. H-CORNER H-TRAP. H-SIZE
V-OUTPUT V-LINEARITY V-LINBAL
VIDEO-CLAMPING & V-BLANK
V-POSITION V-SIZE,VOVSCN
OUTPUT ASYMMETRIC EW-CORR.
HUNLOCK OUTPUT
PROTECTION SOFT START
7501
TDA4841PS
FOCUS HOR. & VERT.
12C BUS RECEIVER
12C BUS REGISTERS
12V
SUPPLY & REFERENCE
COINCIDENCE DETECTOR FREQUENCY DETECTOR TV-MODE
X-RAY PROTECT.
B+ CONTROL
H/C-SYNC INPUT & POLARITY CORRECTION
PLL1 & H-POSITION
HORIZONTAL OSCILLATOR
PLL2 & PARAL&PINUNBAL. SOFT START
H-OUTPUT STAGE
+13
6401
VER-
VER+
7401
TDA8177F
VOut
1601-4
V. YOKE
1601-3
7601,7602
BUCK CONVERTER BUFFER
G
7603
BUCK CONVERTER
+180
7605
HOR. DRIVER
5615
HOR. DRIVER X'FORMER
7606
HOR. OUTPUT TRANSISTOR
7506
7508
C0
2614,2615
2616
6600
DIODE DAMPER
1601-1
H. YOKE
1601-2
H-DC SHIFT
7682
7683
7621
LM358
TILT CORRECTION HOR. LINEARITY
5601
HOR. LINEARITY COIL
01
02
03
S-CAP SWITCH
DYNAMIC FOCUS
7685
5612LOT
EHT
FOUCS
G2
5671
DAF
2679
2625
5606
7604
6609
ABL-CONTROL
EHT-COMP
7607,7608
HOR. RASTER POSITION
-178
1156-3 POWER
AC INLET
5108 FILTER
3102
NTC
6101
GBU4k
5113
X'FORMER
+180A
180
+80
6133
-6v
7116
Bf422
OFF
+12
6135
-12
7114
+5
7113
+8
7101
3108,3109
3112,3113
CURRENT SENSED
Current Sense
DRV.
7106
TEA1504
6107
DEGAUSS COIL
3124
D4R5QC
1104
RELAY-2
3121
3122
PWR SWITCH
1106
6113
7111
TCET1103G
1k
3144
3145
B+ ADJ.
7112
TL431

Video Schematic Diagram

A


VIDEO BOARD (51701/52141)
1301
B-IN
G-IN
R-IN
H-SYNC
V-SYNC
SDA
SCL
S-TEST
JFE635V
7301
TDA4886
FBL
OSD1
OSD2
OSD3
CLI
Vin1
Vp
Vin2
GND
Vin3
HFB
SDA
LIM
F_R1
Vout1
Vp1
F_R2
Vout2
Vp2
F_R3
Vout3
Vp3
GNDX
SCL
7701
LM2437
VBB
VCC
Vin1
Vin2
Vin3
Vout1
Vout2
Vout3
GND
7721
BF422
7722
BF422
7731
BF422
7732
BF422
7751
BF422
7752
BF422
BAV103
BAV21
1N4148
F715 1703
1711-G
1711-D
1711-B
1711-F
1711-E
POWER CON
1714
JFE626H
G1
GND(BRI)
H-FLB
ABL
CLBL
+12V
+8V
GND
-8V3
+75V
7304
AGND
VCO
RP
VddA
HFLB
SS
SDA
SCL
DGND
R
G
B
FBKG
HTONE
VFLB
VddD
7322
BC548C
7761
BC548C
SIGNAL CON
1713
JFE626H
DDC5V
V-SYNC
H-SYNC
S-TEST
SCL(DDC)
SDA(DDC)
GND
SCL
SDA

ITEM	None Chinese OSD	Chinese OSD
7801	P83C280AER/06fi 9352 639 54112	P83C280AER/070 9352 641 48112
7304	MTV018-27 8238 274 34421	MTV030N-02 8238 274 34661
3328	SMD 5k6 2322 730 61562	SMD 3k3 2322 730 61332
3330	SMD 390k 2322 730 61394	SMD 1M 2322 730 61105

1301	C1
1703	C18
1711-1	F19
1711-A	F20
1711-B	E19
1711-C	F21
1711-D	D19
1711-E	F19
1711-F	E19
1711-G	D19
1711-H	F20
1712	H21
1713	M23
1714	I23
2301	D8
2302	E8
2304	F2
2305	F2
2307	H2
2308	E5
2309	E5
2310	E5
2311	F5
2312	D8
2316	D3
2317	D3
2318	E3
2319	F5
2322	M4
2323	M5
2324	L5
2325	L5
2702	E11
2721	D13
2722	D12
2723	D14
2724	D16
2725	E18
2726	D12
2731	F14
2732	F16
2733	D18
2751	I14
2752	H15
2753	D18
2754	I16
2755	I16
2760	N8
2761	N7
2762	L7
2763	M8
2770	L22
2771	G18
2772	G20
2773	K21
2776	I21
2777	J21
2778	K22
2779	N20
2780	N20
2781	N20
2782	M20
2783	F8
2784	G21
3301	D2
3302	D2
3303	E2
3305	F2
3306	F2
3307	H2
3309	D5
3310	D4
3311	D5
3312	C2
3313	D2
3314	E2
3315	F5
3316	F4
3317	C6
3318	C6
3319	C6
3324	M1
3325	N2
3326	N2
3327	M5
3328	M4
3329	M4
3330	M5
3332	N5
3333	N5
3334	L5
3342	I22
3703	E10
3704	D7
3705	D7
3706	E7
3713	F10
3716	F10
3718	N21
3719	N21
3720	N21
3721	D15
3722	E15
3723	C15
3724	B16
3725	C16
3726	C16
3727	C16
3728	D13
3729	M21
3731	F15
3732	G15
3733	F15
3734	E16
3735	E16
3736	E16
3737	F16
3738	F13
3739	D15
3740	F15
3741	D12
3742	D12
3743	I15
3751	I15
3752	I15
3753	H15
3754	G16
3755	G16
3756	H16
3757	H16
3758	I13
3761	M7
3762	N7
3763	N8
3764	N8
3765	N8
3767	M8
3771	H20
3772	G21
3773	J22
3776	L22
3777	J20
3778	K22
3779	I21
5301	C5
5701	F8
5702	D13
5721	D14
5732	F14
5752	I14
5761	N7
5771	G18
5771	G20
5772	M21
5773	M22
5775	D15
5776	H15
5778	F15
5779	D11
5781	I22
5786	J21
6301	F2
6302	F2
6303	G2
6304	G2
6305	C5
6721	D15
6722	D15
6724	D14
6731	F15
6732	G15
6734	G14
6751	H15
6752	I15
6754	I14
6771	G20
6772	K22
6773	E16
6774	G16
6775	C16
7301	C6
7304	L6
7322	N1
7701	E11
7721	C15
7722	C16
7731	E15
7732	E16
7751	H15
7752	H16
7761	N8
9728	H17
F301	C1
F302	D1
F303	D1
F304	E1
F305	E1
F306	E1
F307	F1
F308	F1
F309	G1
F310	G1
F311	D1
F312	H1
F701	D18
F702	D18
F703	E18
F704	E18
F705	F18
F706	G19
F707	G20
F708	G21
F709	G21
F715	C18
F716	G21
F721	I23
F722	I23
F723	J23
F724	J23
F725	J23
F726	J23
F727	J23
F728	J23
F729	J23
F730	K23
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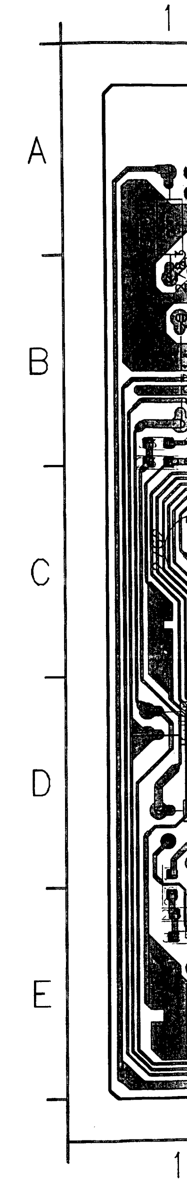
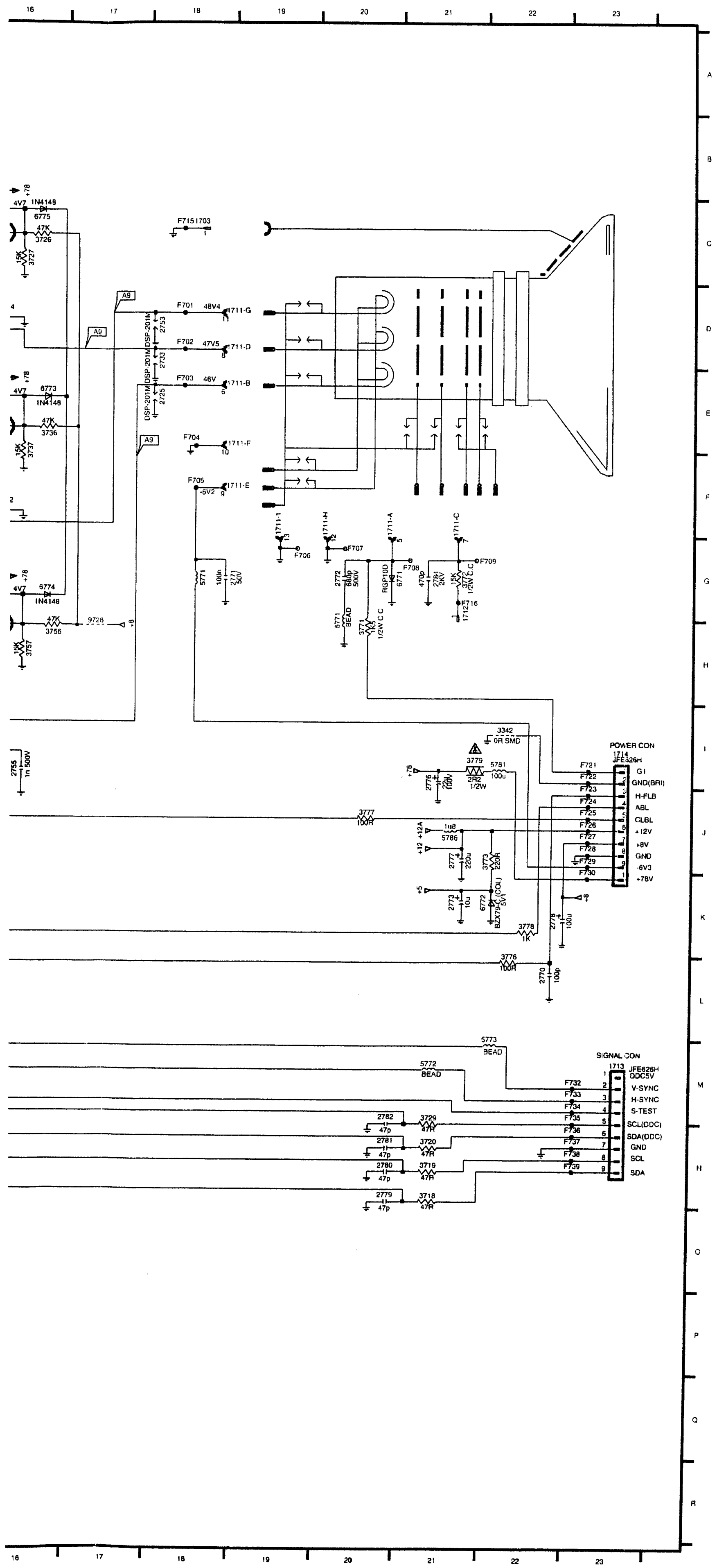
F737	N23
F738	N23
F739	N23




16
17
18
19
20
21
22
23
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
+78
4V7
1N4148
6775
47K
3726
15K
3727
F7151703
1
A9
F701
48V4
1711-G
F702
47V5
1711-D
8
F703
46V
1711-B
6
DSP-201M
2753
2733
2725
6773
3736
3737
F704
1711-F
10
F705
-6V2
1711-E
9
6774
3756
3757
9728
+8
1711-1
13
F706
1711-H
12
F707
1711-A
5
F708
1711-C
7
F709
5771
100n
2771
50V
2772
680p
500V
5771
BEAD
3771
1K5
1/2W C C
RGP10D
6771
470p
2784
2KV
15K
3772
1/2W C.C
F716
1712
2755
1n 500V
3342
0R SMD
3779
2R2
1/2W
5781
100u
2776
22u
100V
POWER CON
1714
JFE626H
F721
F722
F723
F724
F725
F726
F727
F728
F729
F730
G1
GND(BRI)
H-FLB
ABL
CLBL
+12V
+8V
GND
-6V3
+78V
3777
100R
+12A
+12
1u8
5786
2777
220u
3773
220R
+5
2773
10u
6772
BZX79-C (COL)
5V1
3778
1K
2778
100u
3776
100R
2770
100p
5773
BEAD
5772
BEAD
SIGNAL CON
1713
JFE626H
DDC5V
V-SYNC
H-SYNC
S-TEST
SCL(DDC)
SDA(DDC)
GND
SCL
SDA
F732
F733
F734
F735
F736
F737
F738
F739
2782
47p
3729
47R
2781
47p
3720
47R
2780
47p
3719
47R
2779
47p
3718
47R

1301	C1
1703	C18
1711-1	F19
1711-A	F20
1711-B	E19
1711-C	F21
1711-D	D19
1711-E	F19
1711-F	E19
1711-G	D19
1711-H	F20
1712	H21
1713	M23
1714	I23
2301	D8
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2304	F2
2305	F2
2307	H2
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2312	D8
2316	D3
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2318	E3
2319	F5
2322	M4
2323	M5
2324	L5
2325	L5
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2721	D13
2722	D12
2723	D14
2724	D16
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2726	D12
2731	F14
2732	F16
2733	D18
2751	I14
2752	H15
2753	D18
2754	I16
2755	I16
2760	N8
2761	N7
2762	L7
2763	M8
2770	L22
2771	G18
2772	G20
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2776	I21
2777	J21
2778	K22
2779	N20
2780	N20
2781	N20
2782	M20
2783	F8
2784	G21
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3306	F2
3307	H2
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3737	F16
3738	F13
3739	D15
3740	F15
3741	D12
3742	D12
3743	I15
3751	I15
3752	I15
3753	H15
3754	G16
3755	G16
3756	H16
3757	H16
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3763	N8
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3767	M8
3771	H20
3772	G21
3773	J22
3776	L22
3777	J20
3778	K22
3779	I21
5301	C5
5701	F8
5702	D13
5721	D14
5732	F14
5752	I14
5761	N7
5771	G18
5771	G20
5772	M21
5773	M22
5775	D15
5776	H15
5778	F15
5779	D11
5781	I22
5786	J21
6301	F2
6302	F2
6303	G2
6304	G2
6305	C5
6721	D15
6722	D15
6724	D14
6731	F15
6732	G15
6734	G14
6751	H15
6752	I15
6754	I14
6771	G20
6772	K22
6773	E16
6774	G16
6775	C16
7301	C6
7304	L6
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7721	C15
7722	C16
7731	E15
7732	E16
7751	H15
7752	H16
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9728	H17
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F302	D1
F303	D1
F304	E1
F305	E1
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F703	E18
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F705	F18
F706	G19
F707	G20
F708	G21
F709	G21
F715	C18
F716	G21
F721	I23
F722	I23
F723	J23
F724	J23
F725	J23
F726	J23
F727	J23
F728	J23
F729	J23
F730	K23
F732	M23
F733	M23
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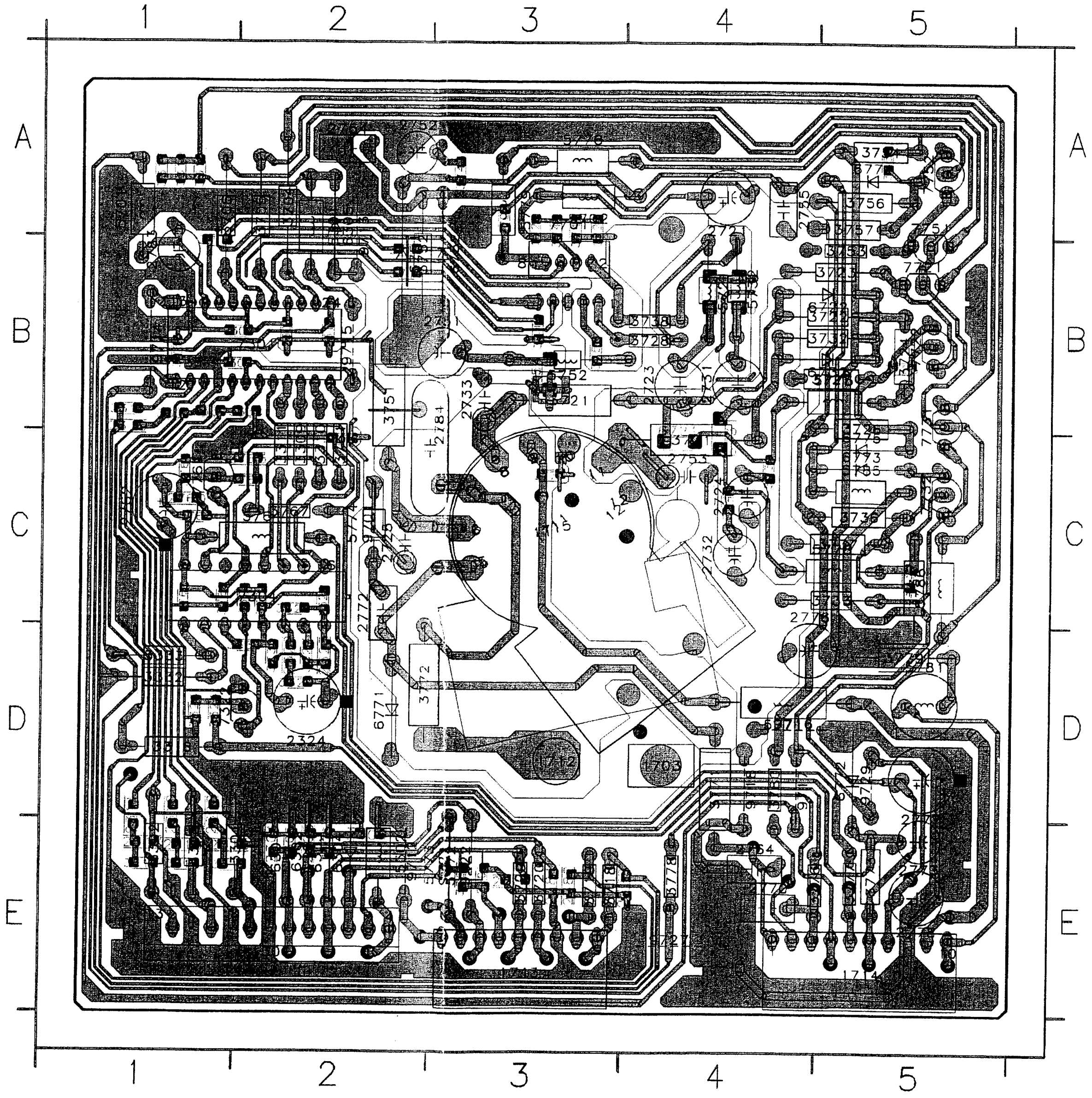
F736	N23
F737	N23
F738	N23
F739	N23

Video Panel C.B.A.(A)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1711	C3
1712	D3
1713	E3
1714	E5
1715	C3
2324	D2
2721	A4
2723	B4
2724	C4
2725	C2
2731	B4
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2751	B3
2752	A2
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2770	E4
2772	C2
2773	E5
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2777	D5
2778	E5
2783	B1
2784	B3
3301	E2
3302	E1
3303	E1
3309	C2
3310	C2
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3332	D1
3333	D1
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3705	A2
3706	A1
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3719	E3
3720	E3
3721	B3
3722	B5
3723	B5
3724	B5
3726	B5
3727	B5
3728	B4
3729	E3
3731	C4
3732	B5
3733	C5
3734	C5
3736	C5
3737	C5
3738	B4
3751	B2
3752	B2
3753	B5
3754	A5
3756	A5
3757	A5
3761	C2
3767	C2
3771	D4
3772	D2
3773	E5
3776	E4
3777	E5
3778	E4
3779	D5
3780	D4
5301	A2
5302	E2
5701	A1
5702	A3
5721	B4
5732	B4
5752	B3
5761	C2
5771	D4
5772	E3
5773	E3
5774	C2
5775	B5
5776	A3
5778	C5
5779	A3
5781	D5
5785	C5
5786	C5
6301	E2
6302	E2
6303	E2
6304	E2
6305	A2
6722	B5
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6752	B3
6771	D2
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6774	A5
6775	C5
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7701	A3
7721	B5
7722	B5
7731	B5
7732	C5
7751	A5
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7761	C1
9701	C2
9712	E2
9713	A2
9714	B1
9715	B2
9716	D4
9717	D4
9718	D4
9721	E3
9722	E3
9727	E4
9729	D5
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2302	B2
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2308	D1
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3739	C4
3740	C4
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3742	A3
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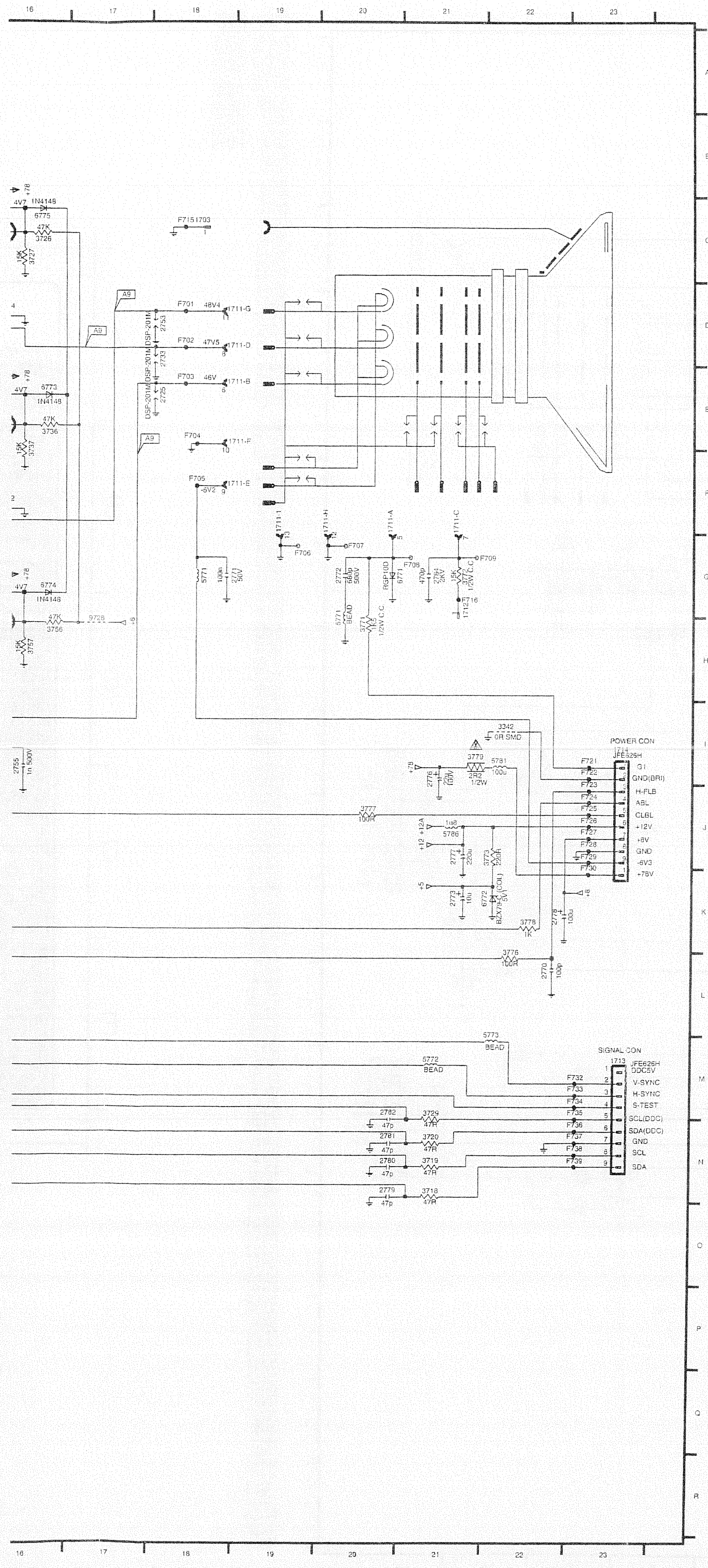
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K
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M
N
O
P
Q
R
4V7
1N4148
6775
47K
3726
3727
F715 1703
A9
F701 46V4 1711-G
F702 47V5 1711-D
F703 46V 1711-B
6773
3736
3737
F704 1711-F
F705 -6V2 1711-E
1711-1
1711-H
1711-A
1711-C
F706
F707
F709
6774
3756
3757
3758
2771
5771 BEAD
3342 0R SMD
3779
2R2 1/2W
5781 100u
2776 100n
POWER CON
1712 JFE26H
G1
GND(BRI)
H-FLB
ABL
CLBL
+12V
+8V
GND
-6V3
+78V
3777 150R
5786
6772
3778 1K
3776 150R
2770 100p
2778 100u
5773 BEAD
5772 BEAD
SIGNAL CON
1713 JFE626H
DDC5V
V-SYNC
H-SYNC
S-TEST
SCL(DDC)
SDA(DDC)
GND
SCL
SDA
2782 47p
2781 47p
2780 47p
2779 47p
3720 47R
3719 47R
3718 47R
2755 1n 500V

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1703	C18
1711-1	F19
1711-A	F20
1711-B	E19
1711-C	F21
1711-D	D19
1711-E	F19
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1711-G	D19
1711-H	F20
1712	H21
1713	M23
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2304	F2
2305	F2
2307	H2
2308	E5
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2310	E5
2311	F5
2312	D8
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2318	E3
2319	F5
2322	M4
2323	M5
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2753	D18
2754	I16
2755	I16
2760	N8
2761	N7
2762	L7
2763	M8
2770	L22
2771	G18
2772	G20
2773	K21
2776	I21
2777	J21
2778	K22
2779	N20
2780	N20
2781	N20
2782	M20
2783	F8
2784	G21
3301	D2
3302	D2
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3312	C2
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3319	C6
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3334	L5
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3713	F10
3716	F10
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3724	B16
3725	C16
3726	C16
3727	C16
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3735	E16
3736	E16
3737	F16
3738	F13
3739	D15
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3741	D12
3742	D12
3743	I15
3751	I15
3752	I15
3753	H15
3754	G16
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3756	H16
3757	H16
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3761	M7
3762	N7
3763	N8
3764	N8
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3771	H20
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3773	J22
3776	L22
3777	J20
3778	K22
3779	I21
5301	C5
5701	F8
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5721	D14
5732	F14
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5773	M22
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5776	H15
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5779	D11
5781	I22
5786	J21
6301	F2
6302	F2
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6305	C5
6721	D15
6722	D15
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6774	G16
6775	C16
7301	C6
7304	L6
7322	N1
7701	E11
7721	C15
7722	C16
7731	E15
7732	E16
7751	H15
7752	H16
7761	N8
9728	H17
F301	C1
F302	D1
F303	D1
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F305	E1
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F723	J23
F724	J23
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F727	J23
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F729	J23
F730	K23
F732	M23
F733	M23
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F736	N23
F737	N23
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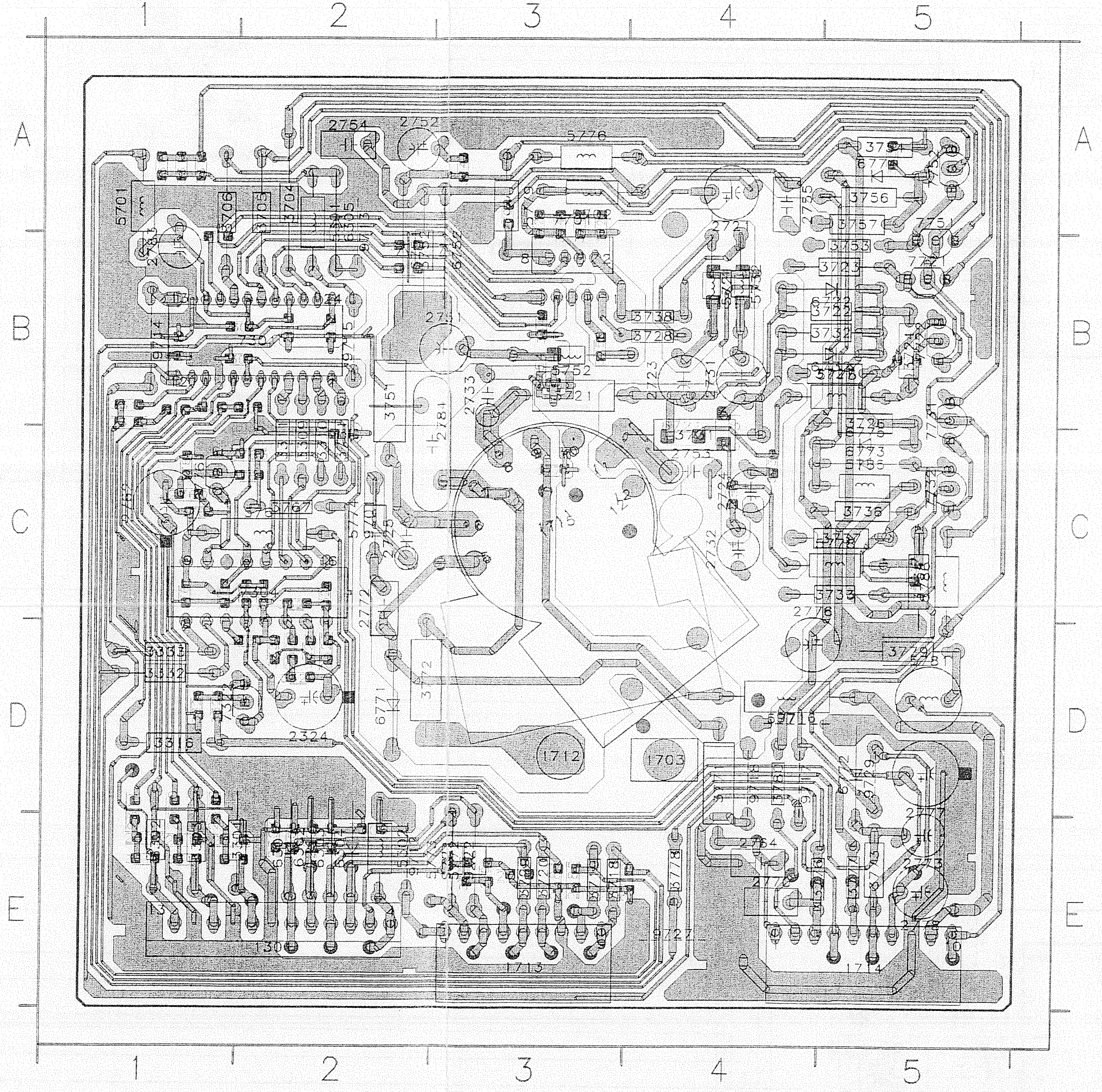
F739	N23

Video Panel C.B.A.(A)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2781
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3751
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2324
3316
3332
6771
1712
1703
1301
1713
1714
9722

1301	E2	3779	D5	2301	B2	6754 B3
1703	D4	3780	D4	2302	B2	
1711	C3	5301	A2	2304	E2	
1712	D3	5302	E2	2305	E2	
1713	E3	5701	A1	2306	E2	
1714	E5	5702	A3	2307	E3	
1715	C3	5721	B4	2308	D1	
2324	D2	5732	B4	2309	B1	
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2723	B4	5761	C2	2311	D1	
2724	C4	5771	D4	2312	B2	
2725	C2	5772	E3	2316	E1	
2731	B4	5773	E3	2317	E1	
2732	C4	5774	C2	2318	E1	
2733	B3	5775	B5	2319	B1	
2751	B3	5776	A3	2322	D2	
2752	A2	5778	C5	2323	D2	
2753	C4	5779	A3	2325	C2	
2754	A2	5781	D5	2702	A3	
2755	A4	5785	C5	2722	A3	
2762	C1	5786	C5	2726	A3	
2764	E4	6301	E2	2760	C1	
2770	E4	6302	E2	2761	C1	
2772	C2	6303	E2	2763	C2	
2773	E5	6304	E2	2771	C3	
2776	C4	6305	A2	2779	E4	
2777	D5	6722	B5	2780	E3	
2778	E5	6732	B5	2781	E3	
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3311	C2	7301	B2	3315	B1	
3316	D1	7304	C2	3317	A1	
3332	D1	7322	D1	3318	A1	
3333	D1	7701	A3	3319	A1	
3704	A2	7721	B5	3324	C2	
3705	A2	7722	B5	3325	D1	
3706	A1	7731	B5	3326	D1	
3718	E3	7732	C5	3327	D2	
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3738	B4			3740	C4	
3751	B2			3741	A3	
3752	B2			3742	A3	
3753	B5			3743	A3	
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3756	A5			3758	B3	
3757	A5			3762	C1	
3761	C2			3763	C1	
3767	C2			3764	C2	
3771	D4			3765	C1	
3772	D2			3766	B1	
3773	E5			6721	B4	
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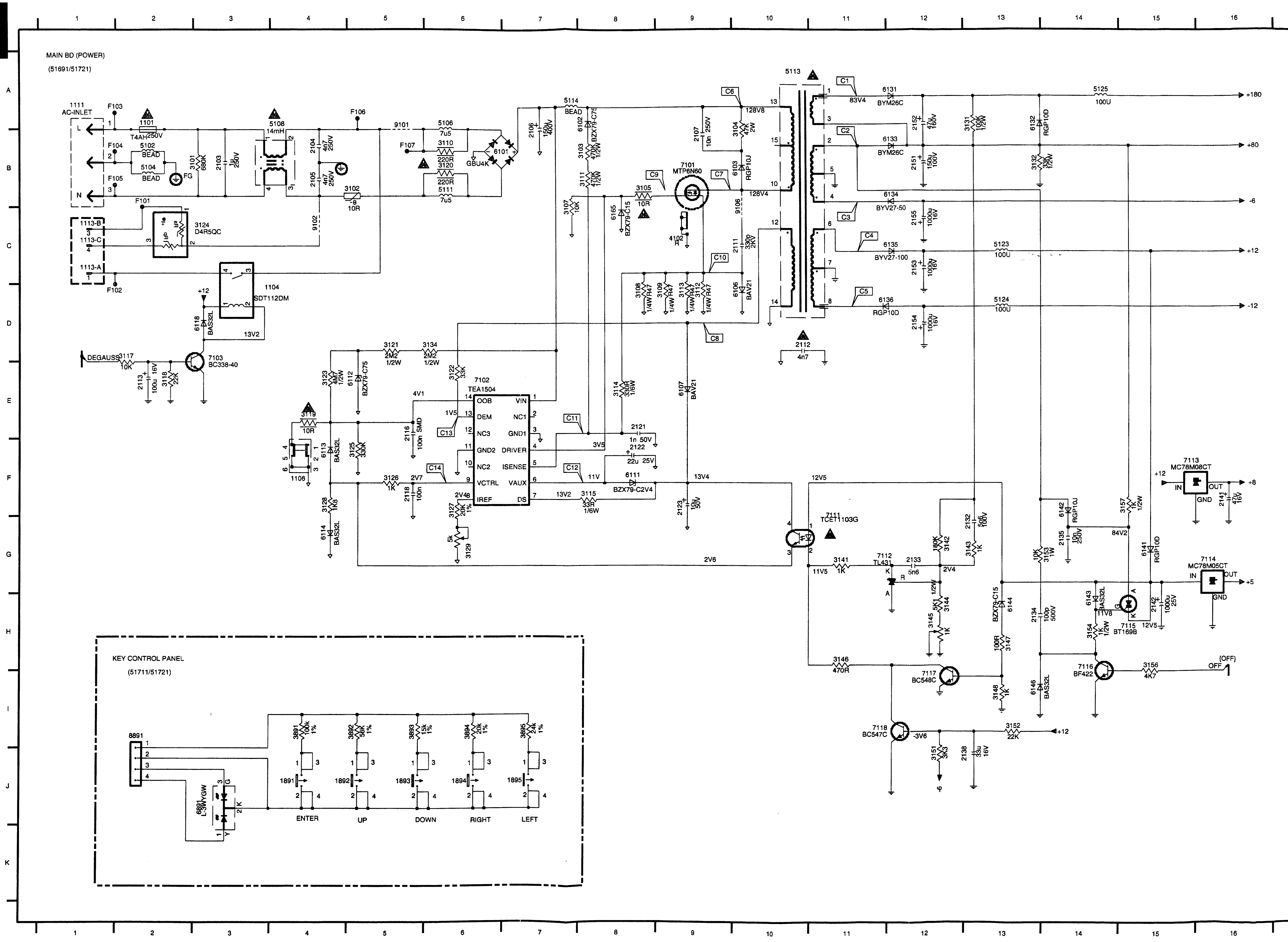
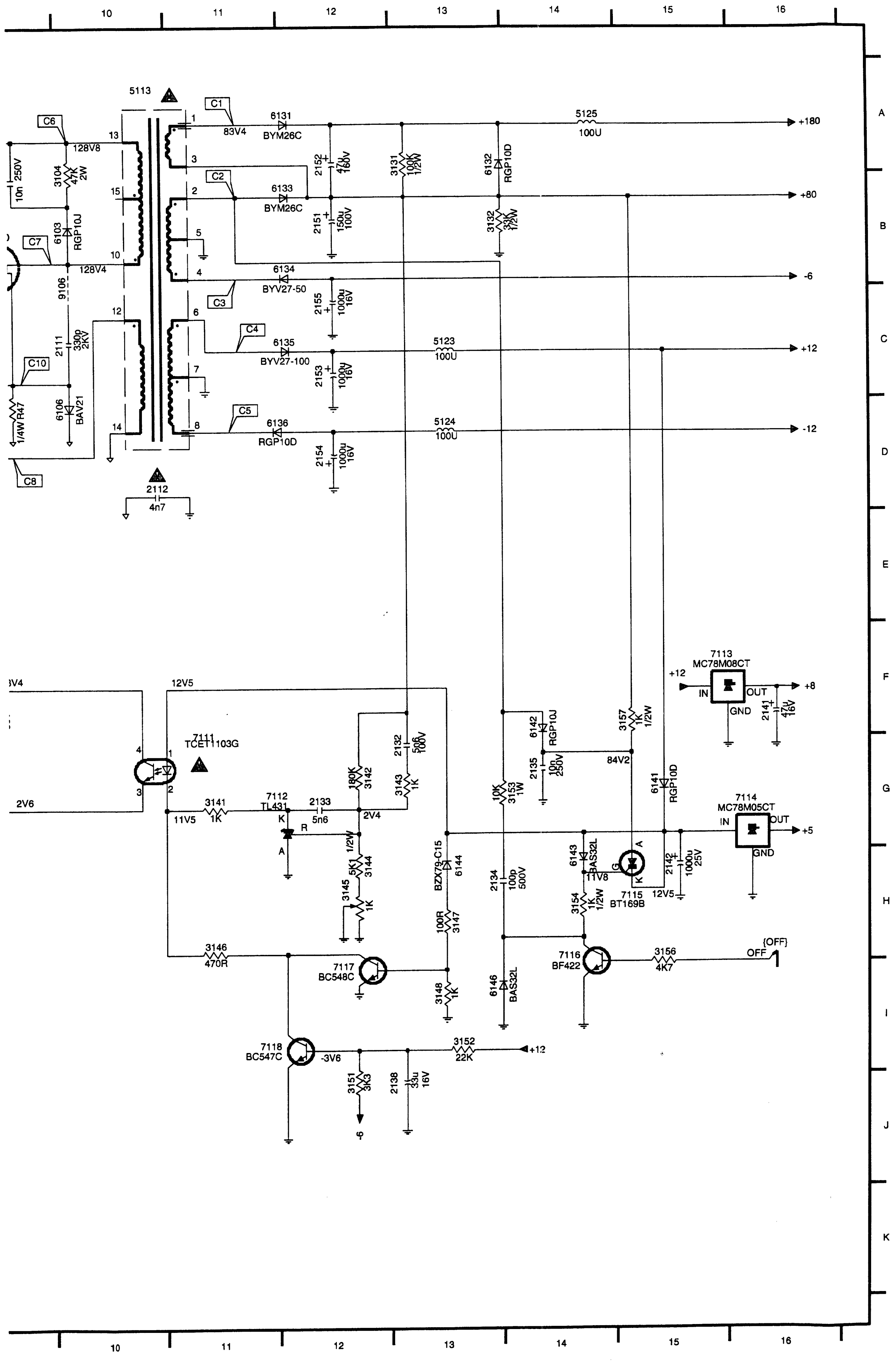
3778	E4			6734	B4	

Power Supply Schematic Diagram

C

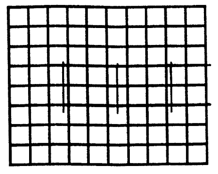

MAIN BD (POWER)
(51691/51721)
1111 AC-INLET
L
N
F103
F104
F105
F101
F102
1101 T4AH 250V
5102 BEAD
5104 BEAD
FG
3101 680K
2103 1u 250V
5108 14mH
2104 4n7 250V
2105 4n7 250V
F106
F107
9101
5106 7u5
3110 220R
3120 220R
5111 7u5
3102 10R
6101 GBU4K
9102
1113-B
1113-C
1113-A
3124 D4R5QC
1104 SDT112DM
+12
6118 BAS32L
13V2
DEGAUSS
3117 10K
2113 100u 16V
3118 22K
7103 BC338-40
5114 BEAD
2106 150u 400V
6102 BZX79-C75
3103 470K 1/2W
3111 470K 1/2W
3107 10K
6165 BZX79-C15
3105 10R
C9
7101 MTP6N60
4102
2107 10n 250V
C6
C7
3104 47K 2W
6103 RGP10J
128V8
128V4
9106
2111 330p 2KV
C10
3108 1/4W R47
3109 1/4W R47
3113 1/4W R47
3112 1/4W R47
6106 BAV21
C8
5113
2112 4n7
C1
C2
C3
C4
C5
6131 BYM26C
83V4
6133 BYM26C
6134 BYV27-50
6135 BYV27-100
6136 RGP10D
2152 47u 160V
2151 150u 100V
2155 1000u 16V
2153 1000u 16V
2154 1000u 16V
3131 100K 1/2W
6132 RGP10D
3132 33K 1/2W
5125 100U
5123 100U
5124 100U
+180
+80
-6
+12
-12
3121 2M2 1/2W
3134 2M2 1/2W
3123 4M7 1/2W
6112 BZX79-C75
3122 33K
7102 TEA1504
OOB
DEM
NC3
GND2
NC2
VCTRL
IREF
VIN
NC1
GND1
DRIVER
ISENSE
VAUX
DS
4V1
1V5
C13
C14
C11
C12
3119 10R
1106
6113 BAS32L
2116 100n SMD
3125 330K
3126 1K
2V7
2118 100n
2V48
3127 20K 1%
3129 5k
3128 1K8
6114 BAS32L
3114 330R 1/6W
6107 BAV21
2121 1n 50V
2122 22u 25V
3V5
11V
6111 BZX79-C2V4
13V4
13V2
3115 33R 1/6W
2123 10u 50V
12V5
7111 TCET1103G
2V6
3141 1K
11V5
7112 TL431
2133 5n6
2V4
3142 180K
2132 56p 100V
3143 1K
3144 5K1 1/2W
3145 1K
6144 BZX79-C15
3147 100R
3148 1K
3146 470R
7117 BC548C
7118 BC547C
-3V6
3151 3K3
2138 33u 16V
3152 22K
+12
-6
3153 10K 1W
2134 100p 500V
2135 10u 250V
6142 RGP10J
6146 BAS32L
6143 BAS32L
11V8
3154 1K 1/2W
7115 BT169B
12V5
3157 1K 1/2W
84V2
6141 RGP10D
2142 1000u 25V
7116 BF422
3156 4K7
(OFF)
OFF
7113 MC78M08CT
IN
OUT
GND
+8
2141 47u 16V
7114 MC78M05CT
+5
KEY CONTROL PANEL
(51711/51721)
8891
6891 L-3WYGW
3891 100k 1%
3892 56k 1%
3893 15k 1%
3894 20k 1%
3895 24k 1%
1891
1892
1893
1894
1895
ENTER
UP
DOWN
RIGHT
LEFT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J K



10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
5113
C1
C2
C3
C4
C5
C6
C7
C8
C10
128V8
128V4
83V4
3104
47K
2W
10n 250V
6103
RGP10J
9106
2111
2n2
2KV
1/4W R47
6106
BAV21
6131
BYM26C
6133
BYM26C
6134
BYV27-50
6135
BYV27-100
6136
RGP10D
5125
100U
5123
100U
5124
100U
2152
47u
250V
2151
150u
100V
2155
1000u
16V
2153
1000u
16V
2154
1000u
16V
3131
100K
1/2W
6132
RGP10D
3132
33K
1/2W
2112
4n7
+180
+80
-6
+12
-12
3V4
12V5
2V6
11V5
7111
TCET1103G
3141
1K
7112
TL431
2133
5n6
2V4
3142
180K
2132
10n
100V
3143
1K
3144
5K1
1/2W
3145
1K
BZX79-C15
6144
3147
100R
3146
470R
7117
BC548C
3148
1K
7118
BC547C
-3V6
3151
3K3
2138
33u
16V
3152
22K
+12
-6
3153
10K
1W
2134
100p
500V
2135
1n
250V
6142
RGP10J
84V2
3157
1K
1/2W
6141
RGP10D
6143
BAS32L
11V8
3154
1K
1/2W
7115
BT169B
12V5
2142
1000u
25V
7116
BF422
3156
4K7
OFF
(OFF)
6146
BAS32L
7113
MC78M08CT
IN
OUT
GND
+8
2141
47u
16V
7114
MC78M05CT
+5

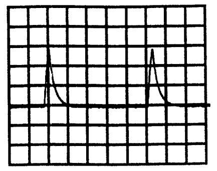
1101	A2
1104	D4
1106	F4
1111	A1
1113-A	C1
1113-B	C1
1113-C	C1
1891	J4
1892	J4
1893	J5
1894	J6
1895	J7
2103	B3
2104	B4
2105	B4
2106	B7
2107	B9
2111	C10
2112	D10
2113	E2
2116	E5
2118	F5
2121	E8
2122	F8
2123	F9
2132	G13
2133	G12
2134	H13
2135	G14
2138	J13
2141	F16
2142	H15
2151	B12
2152	A12
2153	C12
2154	D12
2155	C12
3101	B3
3102	B5
3103	B8
3104	B10
3105	B8
3107	C7
3108	D8
3109	D9
3110	B6
3111	B8
3112	D9
3113	D9
3114	E8
3115	F8
3117	D2
3118	E2
3119	E4
3120	B6
3121	D5
3122	E6
3123	E4
3124	C3
3125	F5
3126	F5
3127	F6
3128	F4
3129	G6
3131	A13
3132	B13
3134	D6
3141	G11
3142	G12
3143	G13
3144	H12
3145	H12
3146	H11
3147	H13
3148	I13
3151	J12
3152	I13
3153	G14
3154	H14
3156	H15
3157	F15
3891	I4
3892	I5
3893	I5
3894	I6
3895	I7
4102	C9
5102	B2
5104	B2
5106	A6
5108	A3
5111	B6
5113	A10
5114	A7
5123	C13
5124	D13
5125	A14
6101	B6
6102	A8
6103	B10
6106	D10
6107	E9
6111	F8
6112	E5
6113	F4
6114	G4
6118	D3
6131	A12
6132	A13
6133	B12
6134	B12
6135	C12
6136	D11
6141	G15
6142	F14
6143	H14
6144	H13
6146	I13
6165	C8
6891	J3
7101	B9
7102	E6
7103	D3
7111	F11
7112	G11
7113	F15
7114	G16
7115	H15
7116	H14
7117	I12
7118	I11
8891	I2
9101	A5
9102	C4
9106	C10
F101	B2
F102	D1
F103	A1
F104	B1
F105	B1
F106	A5
F107	B5

A1 1301-5



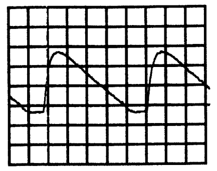
0.2 V/div AC
5 mS/div

A2 1301-6



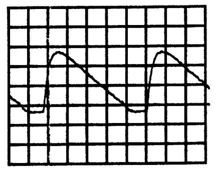
0.1 V/div AC
5 uS/div

A3 1301-10



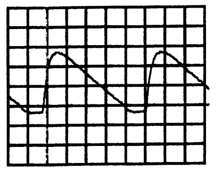
20 mV/div AC
5 uS/div

A3 1301-12



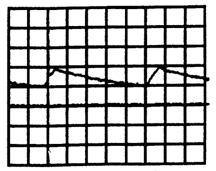
20 m V/div AC
5 uS/div

A3 1301-8



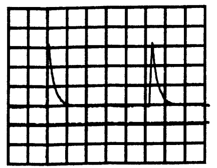
20 mV/div AC
5 uS/div

A4 7301-2



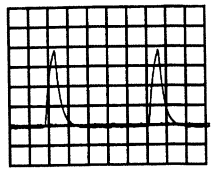
10 mV/div AC
5 uS/div

A5 7301-5



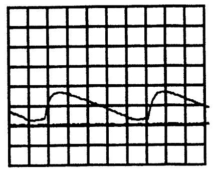
50 mV/div AC
5 uS/div

A6 7301-11



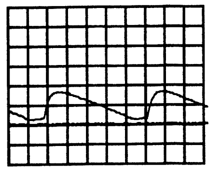
0.2 V/div AC
5 uS/div

A7 7301-16



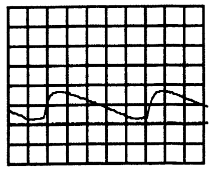
0.2 V/div AC
5 uS/div

A7 7301-19



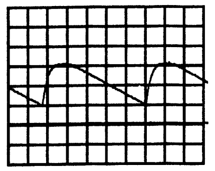
0.2 V/div AC
5 uS/div

A7 7301-22



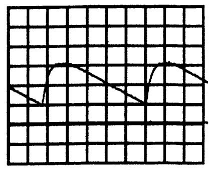
0.2 V/div AC
5 uS/div

A8 7701-1



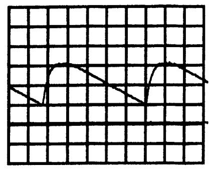
20 V/div AC
5 uS/div

A8 7701-2



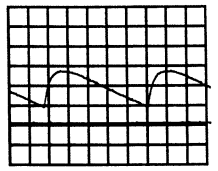
20 V/div AC
5 uS/div

A8 7701-3



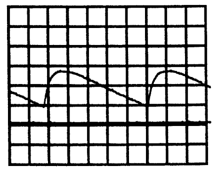
20 V/div AC
5 uS/div

A9 1715-11



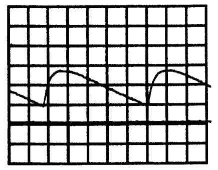
20 V/div AC
5 uS/div

A9 1715-8



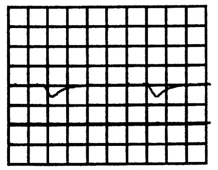
20 V/div AC
5 mS/div

A9 1715-6



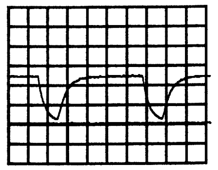
20 V/div AC
5 mS/div

A10 7304-2



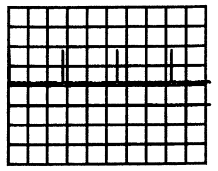
0.5 V/div AC
5 uS/div

A11 7304-5



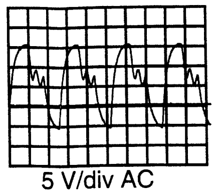
2 V/div AC
5 uS/div

A12 7761-B



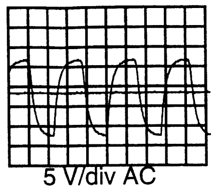
0.2 V/div AC
5 mS/div

C1 5113-1



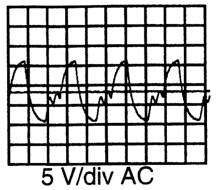
5 V/div AC
5 uS/div

C2 5113-2



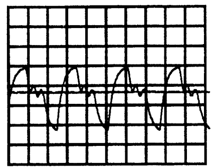
5 V/div AC
5 uS/div

C3 5113-4



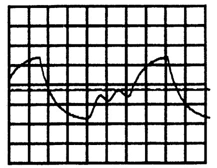
5 V/div AC
5 uS/div

C4 5113-6



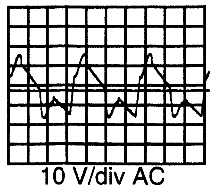
10 V/div AC
5 uS/div

C5 5113-8



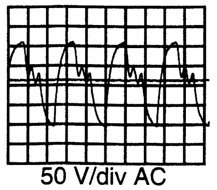
10 V/div AC
2 uS/div

C6 5113-13



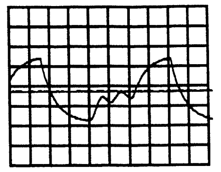
10 V/div AC
5 mS/div

C7 5113-10



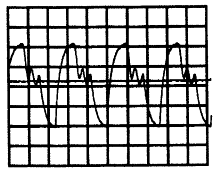
50 V/div AC
5 uS/div

C8 5113-12



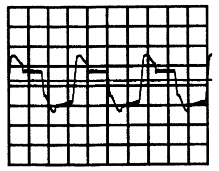
10 V/div AC
5 uS/div

C9 7101-D



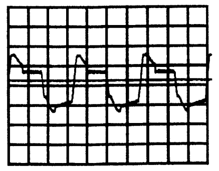
50 V/div AC
5 uS/div

C10 7101-S



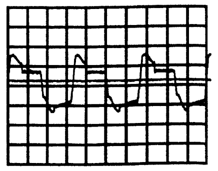
10 V/div AC
5 mS/div

C11 7102-5



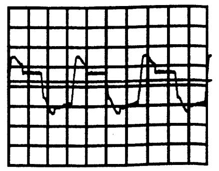
10 V/div AC
5 mS/div

C12 7102-6



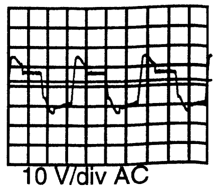
10 V/div AC
5 mS/div

C13 7102-14



10 V/div AC
5 mS/div

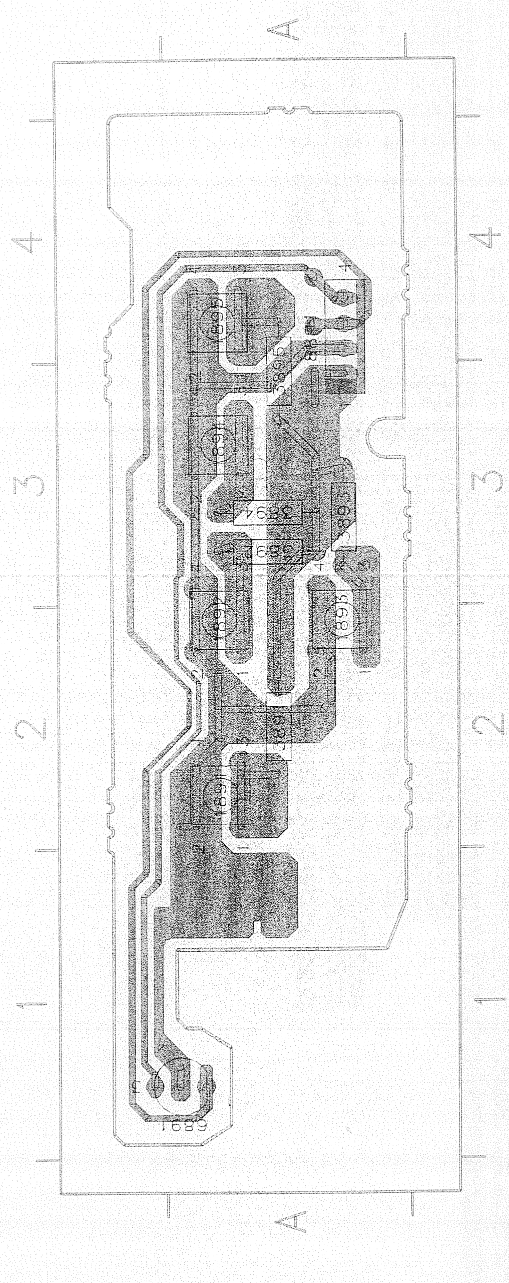
C14 7102-9

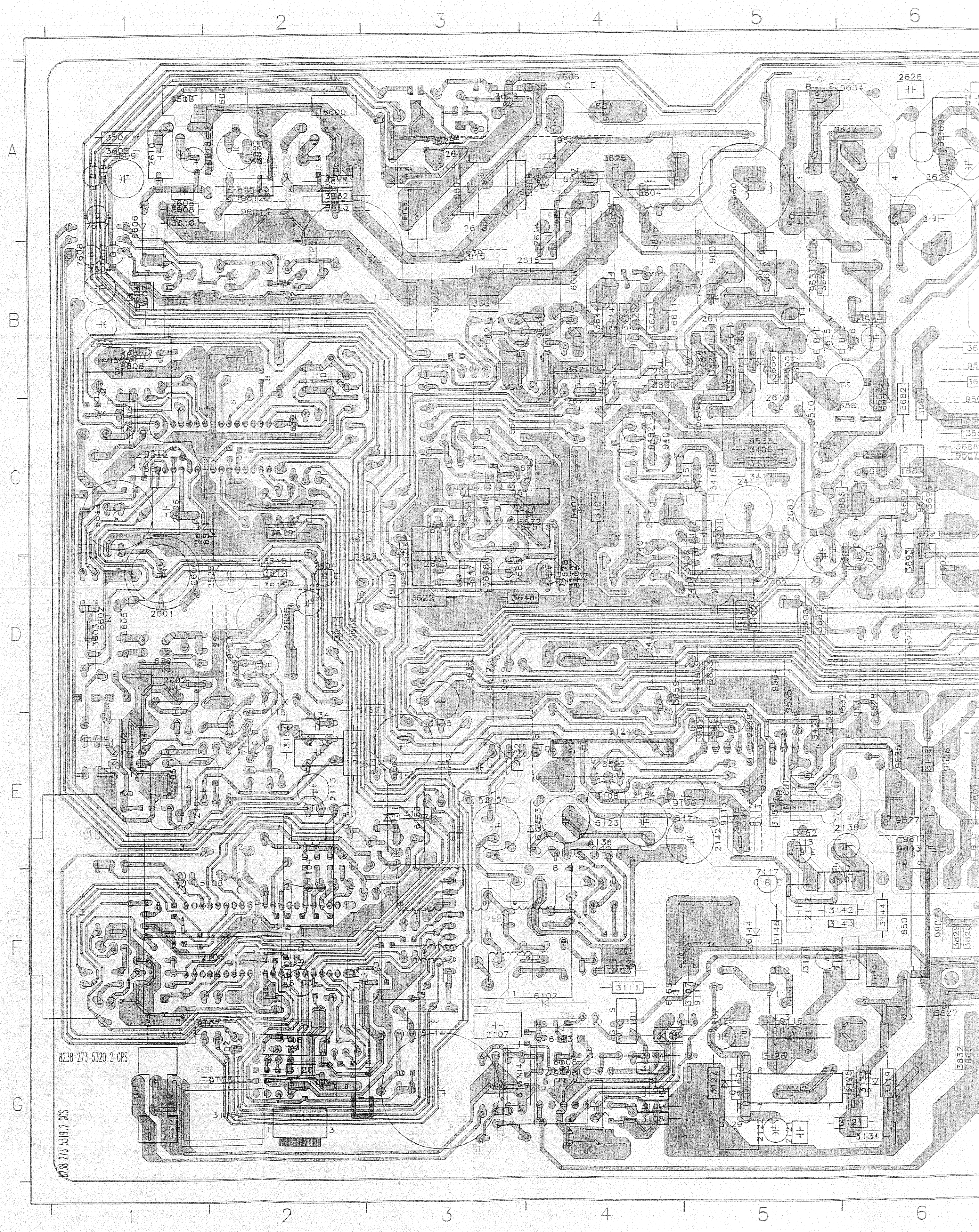


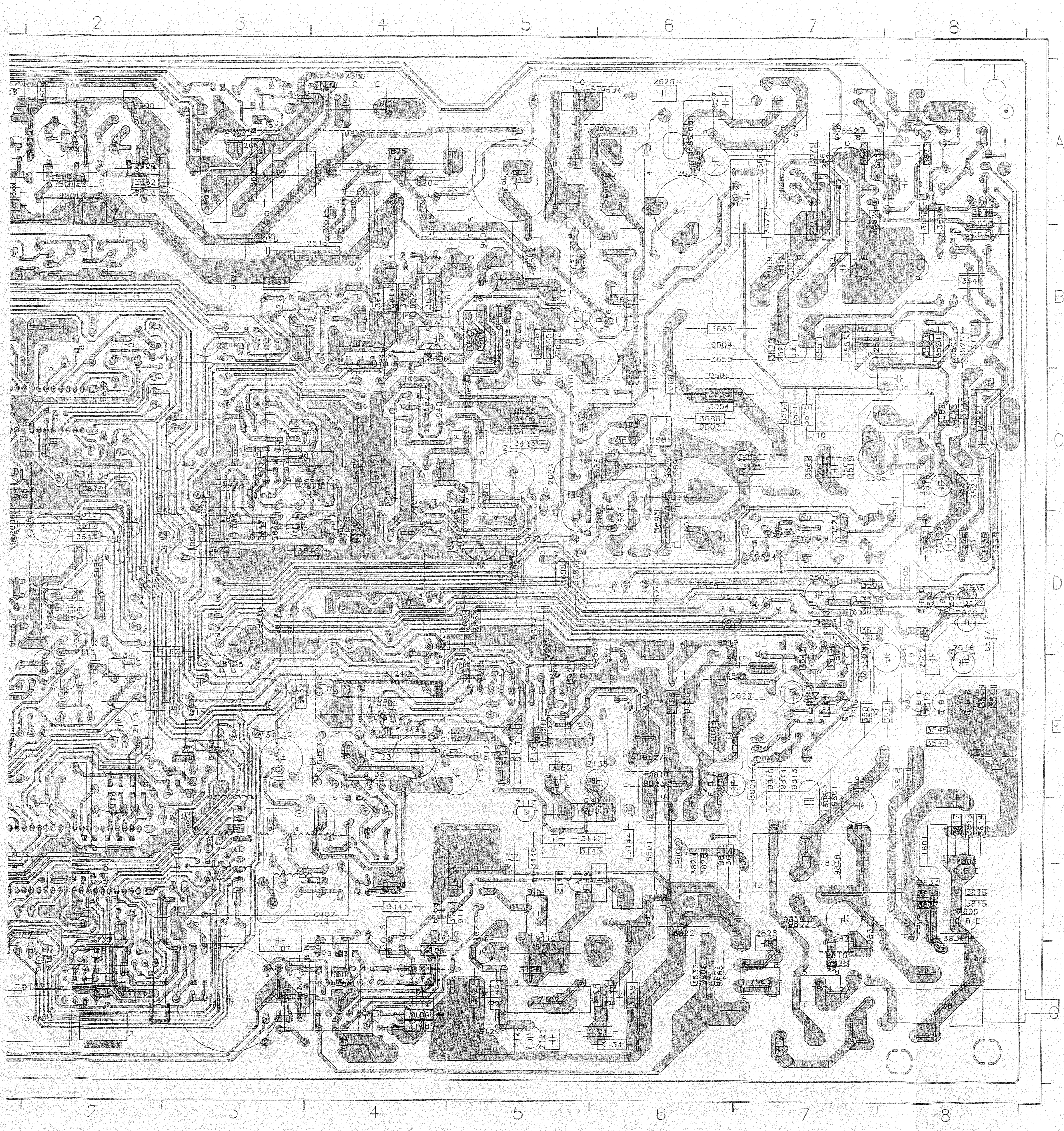
10 V/div AC
5 mS/div

Main Panel (B,C)

1891	A2
1892	A2
1893	A2
1894	A3
1895	A4
3891	A2
3892	A3
3893	A3
3894	A3
3895	A3
6891	A1
8891	A4


A
1
2
3
4
A
1891
1892
1893
1894
1895
3891
3892
3893
3894
3895
6891
8891

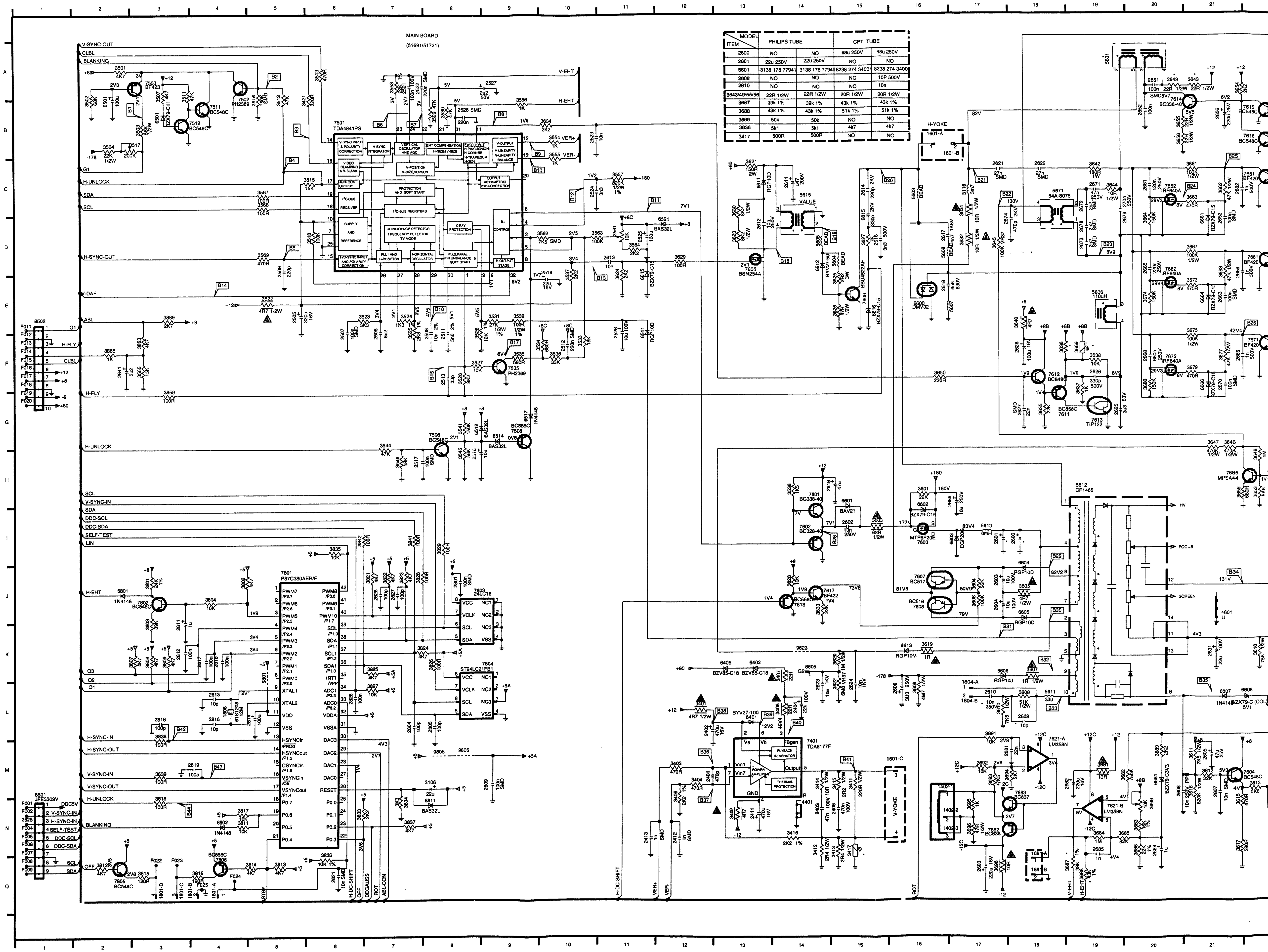

1
2
3
4
5
6
A
B
C
D
E
F
G
8238 273 5320.2 CPS



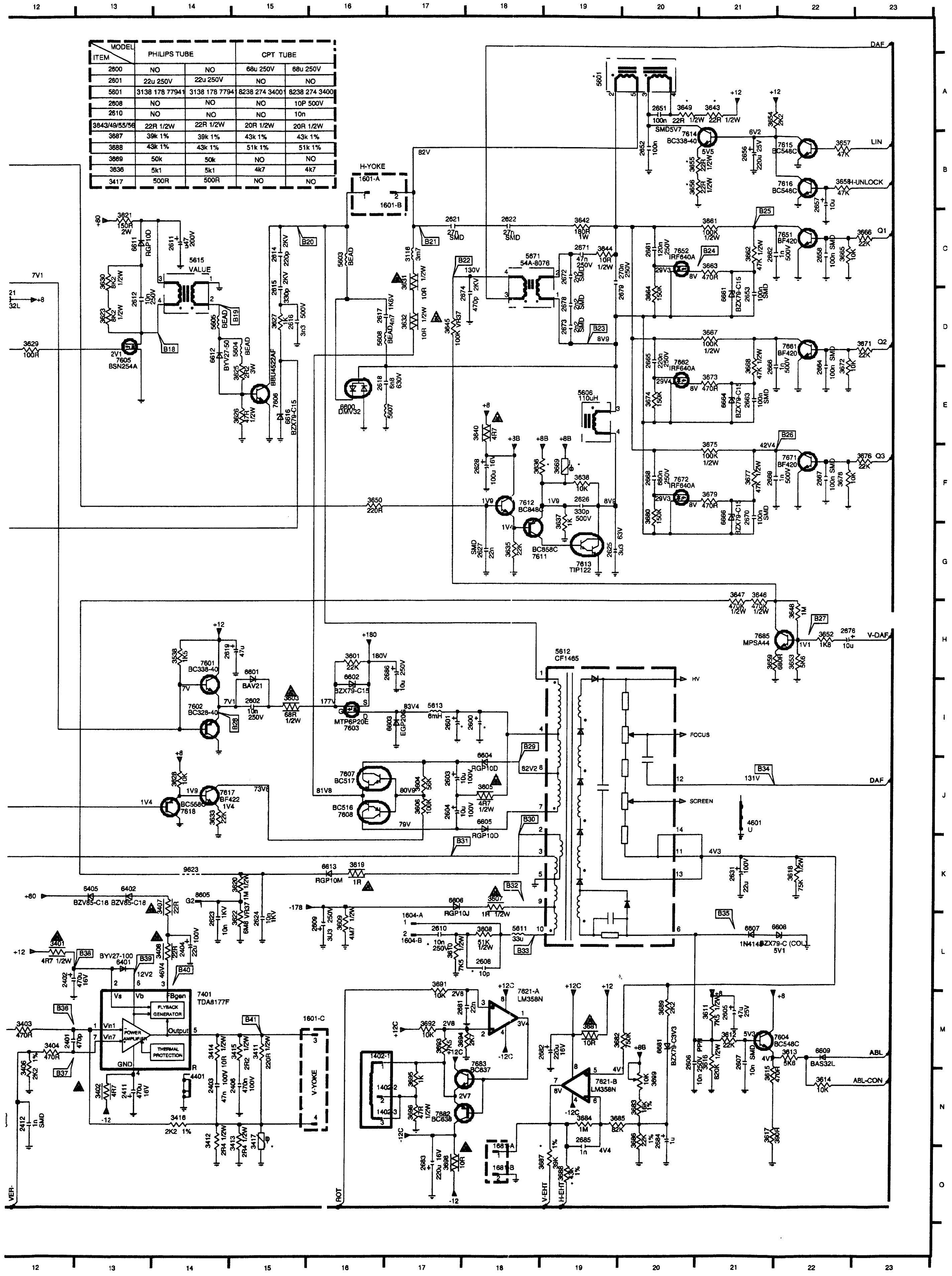
3115	G5	3684	C6	7652	A7
3116	G2	3685	C6	7661	B8
3119	G6	3686	C6	7662	A8
3120	G2	3687	C6	7671	B7
3121	G6	3688	C6	7672	A7
3123	G6	3691	C6	7682	D6
3124	G2	3692	C6	7683	D6
3125	G6	3693	D6	7685	D3
3126	G5	3696	C6	7801	E7
3127	G5	3698	D5	7802	E6
3129	G5	3699	A6	7803	G7
3131	F5	3801	F6	7804	G7
3132	[illegible]	3804	F7	7805	F8
3134	G6	3811	F8	7806	F8
3141	F5	3812	F8	8103	F2
3142	F5	3814	F8	8105	F2
3143	F5	3815	F8	8501	F6
3144	F6	3816	F8	8502	F4
3145	F6	3817	F8	8605	D3
3146	F5	3818	F8	9101	F2
3151	F5	3826	G7	9102	G2
3152	F5	3828	F6	9103	G2
3153	F2	3829	F6	9105	E4
3154	E2	3832	G6	9107	F1

Deflection Schematic Diagram

B


MAIN BOARD
(51691/51721)
7501
TDA4841PS
7801
P87C380AER/F
7802
ST24LC16
7804
ST24LC21FB1
7401
TDA8177F
8502
8501
JFE3309V
V-SYNC-OUT
CLBL
BLANKING
G1
H-UNLOCK
SDA
SCL
H-SYNC-OUT
V-DAF
ABL
H-FLY
V-SYNC-IN
DDC-SCL
DDC-SDA
SELF-TEST
LIN
H-EHT
H-SYNC-IN
V-EHT
H-EHT
VER+
VER-
H-DC-SHIFT
ROT
H-YOKE
1601-A
1601-B
1601-C
V-YOKE
5612
CF1465
HV
FOCUS
SCREEN
7605
BSN254A
7603
MTP6P20E
7685
MPSA44
7813
TIP122
7621-A
LM358N
7621-B
LM358N
5615
VALUE

MODEL / ITEM	PHILIPS TUBE		CPT TUBE	
2600	NO	NO	68u 250V	68u 250V
2601	22u 250V	22u 250V	NO	NO
5601	3138 178 77941	3138 178 7794	8238 274 34001	8238 274 3400
2608	NO	NO	NO	10P 500V
2610	NO	NO	NO	10n
3643/49/55/56	22R 1/2W	22R 1/2W	20R 1/2W	20R 1/2W
3687	39k 1%	39k 1%	43k 1%	43k 1%
3688	43k 1%	43k 1%	51k 1%	51k 1%
3669	50k	50k	NO	NO
3636	5k1	5k1	4k7	4k7
3417	500R	500R	NO	NO



MODEL / ITEM	PHILIPS TUBE		CPT TUBE	
2600	NO	NO	68u 250V	68u 250V
2601	22u 250V	22u 250V	NO	NO
5601	3138 178 77941	3138 178 7794	8238 274 34001	8238 274 3400
2608	NO	NO	NO	10P 500V
2610	NO	NO	NO	10n
3643/49/55/56	22R 1/2W	22R 1/2W	20R 1/2W	20R 1/2W
3687	39k 1%	39k 1%	43k 1%	43k 1%
3688	43k 1%	43k 1%	51k 1%	51k 1%
3669	50k	50k	NO	NO
3636	5k1	5k1	4k7	4k7
3417	500R	500R	NO	NO

1402-1	M16
1402-2	N16
1402-3	N16
1601-A	B16
1601-B	B16
1601-C	M16
1604-A	L17
1604-B	L17
1681-A	O18
1681-B	O18
1801-A	O4
1801-B	O3
1801-C	O3
1801-D	O3
1806	L4
2401	M12
2402	L12
2403	N14
2404	L14
2406	N15
2411	N13
2412	N12
2413	N11
2501	B2
2505	E5
2506	F7
2507	F6
2508	F8
2509	D5
2511	F8
2512	F10
2513	F8
2516	H8
2517	H7
2518	D10
2521	A7
2522	A7
2523	B10
2524	C10
2525	D11
2526	F11
2527	A9
2528	B8
2600	I18
2601	I17
2602	I15
2603	J17
2604	J17
2605	M21
2606	M20
2607	M21
2608	L18
2609	L16
2610	L17
2611	C14
2612	D13
2613	D11
2614	C15
2615	D15
2616	D15
2617	D16
2618	E16
2619	H14
2621	C17
2622	C18
2623	L14
2624	L15
2625	G19
2626	F19
2627	G18
2628	F18
2631	K21
2651	A20
2652	B20
2653	D21
2656	B21
2657	B22
2658	C22
2661	C20
2662	C21
2663	E21
2664	E22
2665	D20
2666	E21
2667	F22
2668	F20
2669	F21
2670	F21
2671	C19
2672	C19
2673	D19
2674	D17
2676	H22
2678	D19
2679	D20
2681	M17
2682	M19
2683	O17
2684	N20
2685	N19
2686	H17
2801	J8
2804	L7
2805	L8
2809	M9
2811	K3
2812	K3
2813	L4
2814	L5
2815	L4
2816	L3
2817	K4
2818	K4
2819	M4
2821	O6
2825	N1
2826	L6
2827	J7
2828	J7
2841	F2
3106	M8
3116	C17
3401	L12
3402	N13
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3404	M12
3406	N12
3407	K14
3408	L14
3411	M15
3412	N14
3413	N15
3414	M14
3415	M15
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3417	N15
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3502	B2
3503	B3
3504	B2
3507	A3
3511	A3
3512	B5
3513	A6
3515	C6
3516	B5
3517	B3
3518	D6
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3524	E7
3525	F7
3526	F8
3527	F8
3528	F8
3529	B8
3530	B8
3531	E9
3532	E9
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3536	F10
3537	E10
3538	H14
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3545	H8
3546	H7
3553	A7
3554	B10
3555	B10
3556	B9
3557	C11
3561	D11
3562	D10
3563	D10
3564	D11
3566	F3
3567	C5
3568	C5
3569	D5
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3619	K16
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3621	C13
3622	L15
3623	D13
3624	E11
3625	E15
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3632	D17
3633	J14
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3639	M3
3640	E18
3642	C19
3643	A21
3644	C19
3645	D17
3646	G21
3647	G21
3648	H22
3649	A20
3650	F16
3652	H22
3653	H22
3654	A21
3655	B20
3656	B20
3657	B22
3658	B22
3659	H21
3661	C21
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3673	E21
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3678	F22
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3683	N20
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3686	N20
3687	O19
3688	O19
3689	M20
3691	L17
3692	M17
3693	M17
3694	M18
3695	N17
3696	N17
3698	O17
3699	N20
3801	J3
3802	J4
3803	K3
3804	J4
3807	K3
3808	K3
3809	K3
3811	N4
3812	O2
3813	O5
3814	O5
3815	O3
3816	O4
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3818	N3
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3836	O6
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3842	I6
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3865	F2
3869	E3
4401	N14
4601	J21
5601	A19
5603	C16
5604	D15
5605	D14
5606	E19
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5608	D16
5611	L18
5612	H19
5613	I17
5615	C14
5671	C18
6401	L13
6402	K13
6405	K13
6501	B3
6511	F11
6512	G8
6514	G9
6517	G9
6521	D12
6600	E16
6601	H15
6602	I16
6603	I17
6604	J18
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6616	E15
6661	D21
6664	E21
6666	F21
6681	M20
6801	J2
6802	N4
6811	N8
7401	M14
7501	B6
7502	B5
7503	A3
7505	F9
7506	G8
7508	G9
7511	B4
7512	B3
7601	H14
7602	I14
7603	I16
7604	M21
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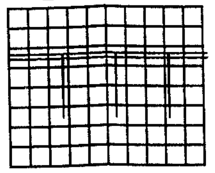
7606	E15
7607	J16
7608	J16
7611	G18
7612	F18
7613	G19
7614	B20
7615	B22
7616	B22
7617	J14
7618	J14
7621-A	M18
7621-B	N19
7651	C22
7652	C20
7661	D22
7662	D20
7671	F22
7672	F20
7682	N17
7683	M18
7685	H21
7801	J5
7802	J3
7803	J9
7804	K9
7805	O2
7806	O4
8501	M1
8502	E1
8605	K14
9623	K14
9801	K5
9805	M8
9806	M8
F001	N1
F002	N1
F004	N1
F005	N1
F006	N1
F007	N1
F008	O1
F009	O1
F011	E1
F012	F1
F013	F1
F014	F1
F015	F1
F016	F1
F017	F1
F018	F1
F019	G1
F020	G1
F022	O3
F023	O3
F024	O4
F025	O4

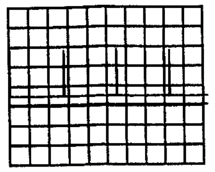
Waveform (B)

B1 7503-C



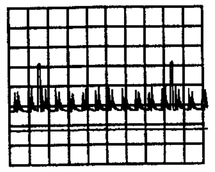
10 V/div AC
5 mS/div

B2 7502-B



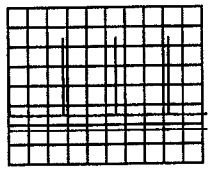
0.2 V/div AC
5 mS/div

B3 7501-16



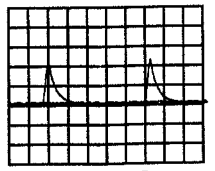
0.5 V/div AC
2 mS/div

B4 7501-17



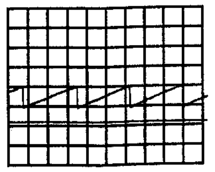
0.2 V/div AC
5 mS/div

B5 7501-15



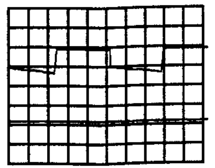
1 V/div AC
5 uS/div

B6 7501-24



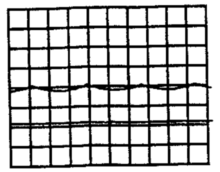
2 V/div AC
5 mS/div

B7 7501-22



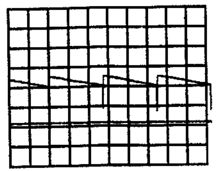
1 V/div AC
10 mS/div

B8 7501-11



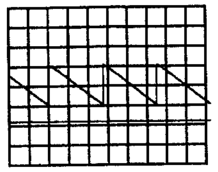
1 V/div AC
5 mS/div

B9 7501-12



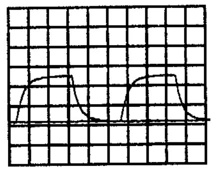
0.5 V/div AC
5 mS/div

B10 7501-13



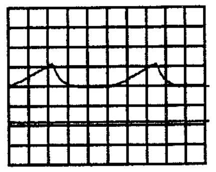
0.5 V/div AC
5 mS/div

B11 7501-6



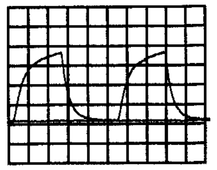
5 V/div AC
5 uS/div

B12 7501-4



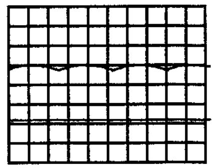
0.5 V/div AC
5 uS/div

B13 7501-8



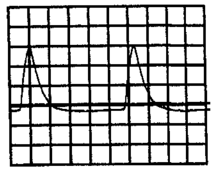
2 V/div AC
5 uS/div

B14 7501-32



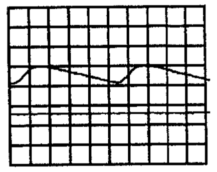
2 V/div AC
5 mS/div

B15 7501-1



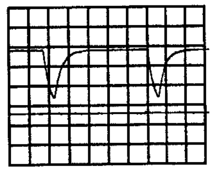
1 V/div AC
5 uS/div

B16 7501-29



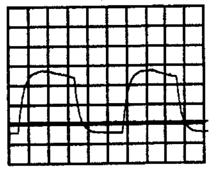
2 V/div AC
5 uS/div

B17 7505-C



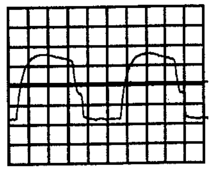
2V/div AC
5 uS/div

B18 5615-4



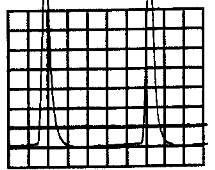
50 V/div AC
5 uS/div

B19 5615-2



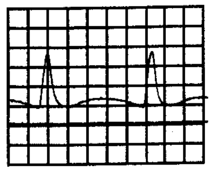
2 V/div AC
5 uS/div

B20 7606-C



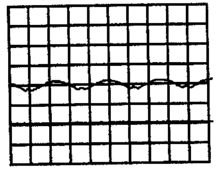
100 V/div AC
5 uS/div

B21 1601-2



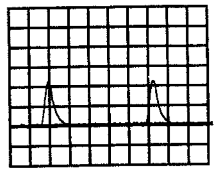
50 V/div AC
5 uS/div

B22 5671-4



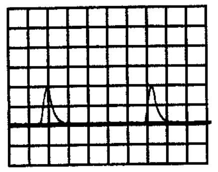
50 V/div AC
10 uS/div

B23 5671-1



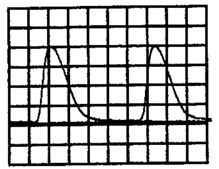
50 V/div AC
10 uS/div

B24 7652-G



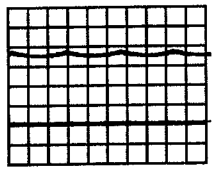
50 V/div AC
5 uS/div

B25 7651-C



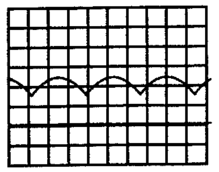
1 V/div AC
5 uS/div

B26 7671-C



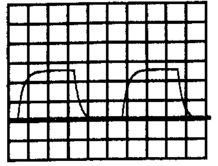
10 V/div AC
5 mS/div

B27 7685-B



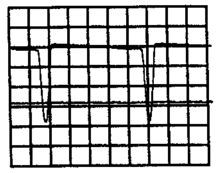
0.5 V/div AC
5 mS/div

B28 7601-E



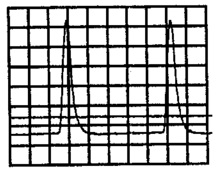
5 V/div AC
5 uS/div

B29 5612-8



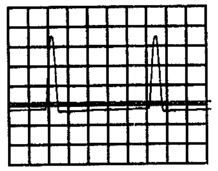
10 V/div AC
5 uS/div

B30 5612-2



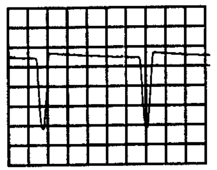
100 V/div AC
5 uS/div

B31 5612-3



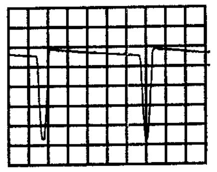
20 V/div AC
5 uS/div

B32 5612-9



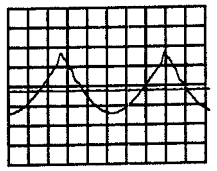
50 V/div AC
5 uS/div

B33 5612-10



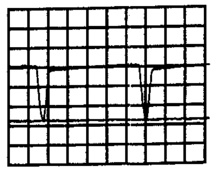
50 V/div AC
5 uS/div

B34 5612-12



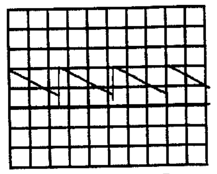
100 V/div AC
5 uS/div

B35 5612-6



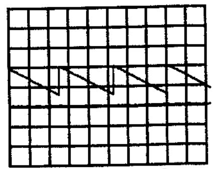
2 V/div AC
5 uS/div

B36 7401-1



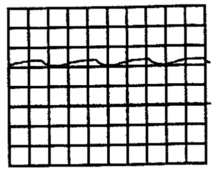
0.5 V/div AC
5 mS/div

B37 7401-7



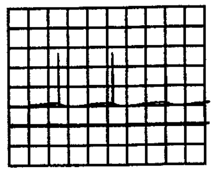
0.5 V/div AC
5 mS/div

B38 7401-2



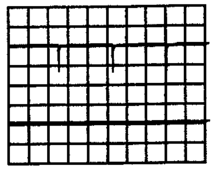
5 V/div AC
5 mS/div

B39 7401-6



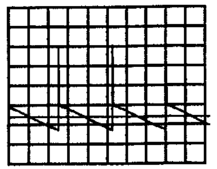
10 V/div AC
5 mS/div

B40 7401-3



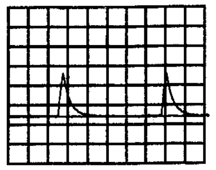
10 V/div AC
5 mS/div

B41 7401-5



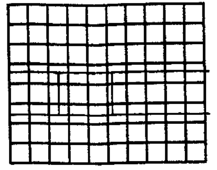
10 V/div AC
5 mS/div

B42 7801-13



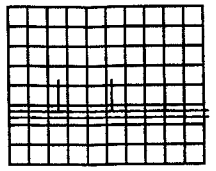
1 V/div AC
5 uS/div

B43 7801-16



2 V/div AC
5 mS/div

B44 7801-18



0.5 V/div AC
5 mS/div

Repair Tips

0. Warning

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the unit via a wrist wrap with resistance. Keep components and tools also at the same potential !

1. Servicing of SMDs (Surface Mounted Devices)

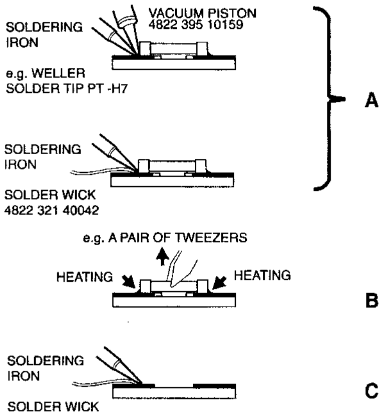
1.1 General cautions on handling and storage

- Oxidation on the terminals of SMDs results in poor soldering. Do not handle SMDs with bare hands.
- Avoid using storage places that are sensitive to oxidation such as places with sulphur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity. The capacitance or resistance value of the SMDs may be affected by this.
- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

1.2 Removal of SMDs

- Heat the solder (for 2-3 seconds) at each terminal of the chip. By means of litz wire and a slight horizontal force, small components can be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 1A)

Fig. 1 DISMOUNTING



- While holding the SMD with a pair of tweezers, take it off gently using the soldering iron's heat applied to each terminal (see Fig. 1 B).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 1C).

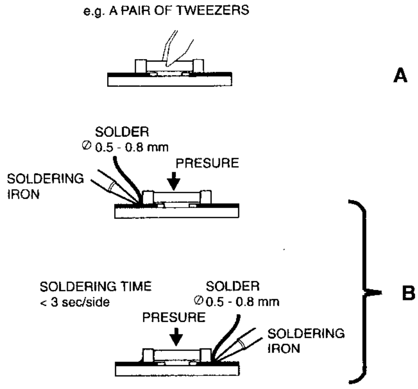
1.3 Caution on removal

- When handling the soldering.iron. use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- The chip, once removed, must never be reused.

1.4 Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component on one side. Ensure that the component is positioned correctly on the solder lands (see Fig.2A).
- Next complete the soldering of the terminals of the component (see Fiq. 2B).

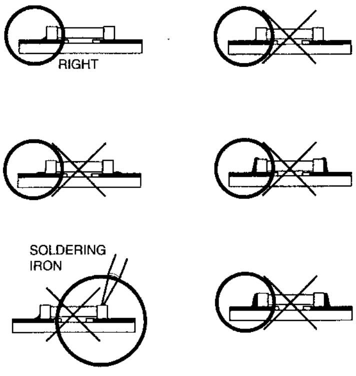
Fig. 2 MOUNTING



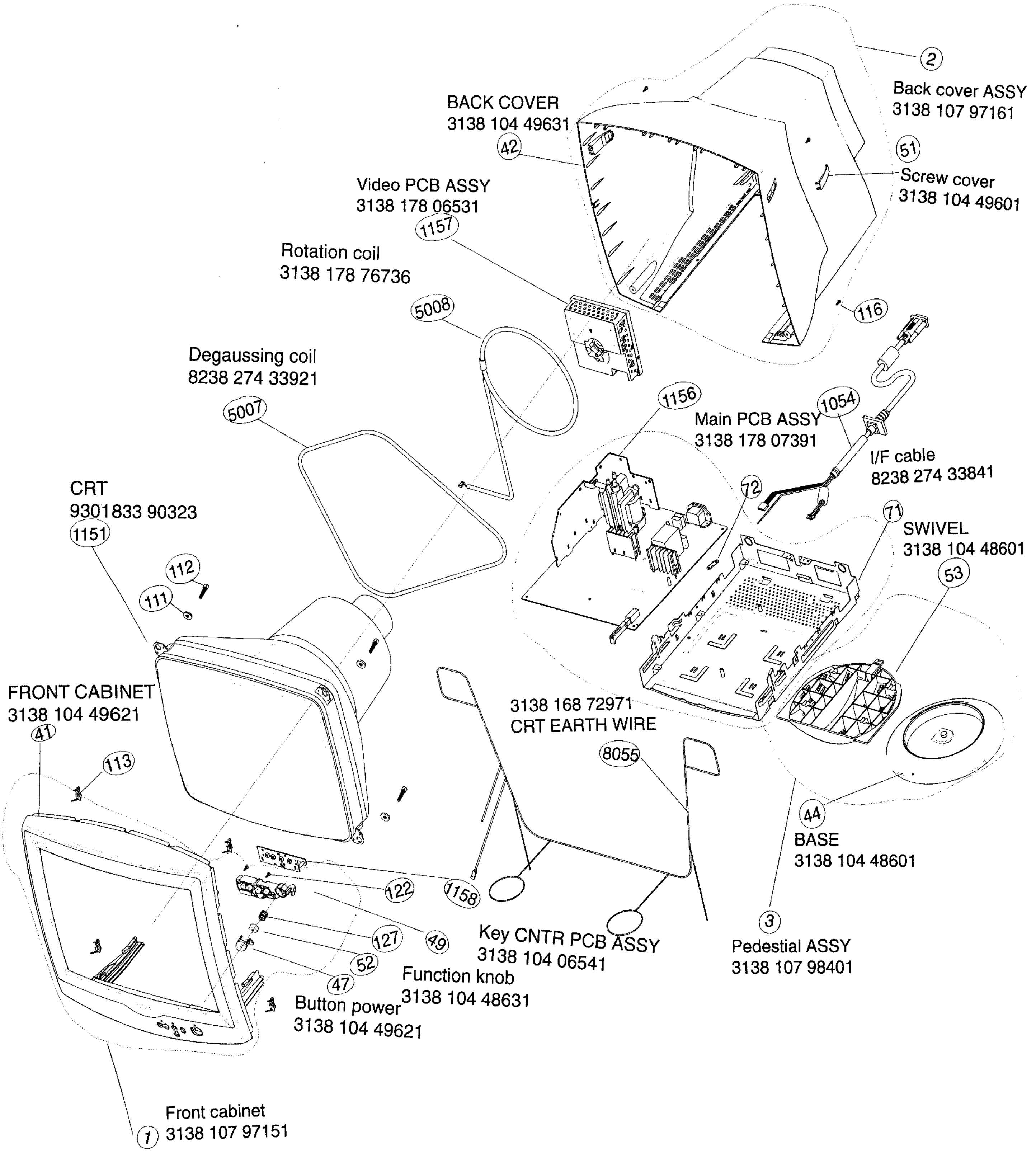
2. Caution when attaching SMDs

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering should be done as quickly as possible, care must be taken to avoid damage to the terminals of the SMDs themselves.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) should preferably be equipped with a thermal control (soldering temperature: 225 to 250 °C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used, but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional to the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 3).

Fig. 3 Examples



Exploded View


2
Back cover ASSY
3138 107 97161
BACK COVER
3138 104 49631
42
51
Screw cover
3138 104 49601
Video PCB ASSY
3138 178 06531
1157
Rotation coil
3138 178 76736
5008
116
Degaussing coil
8238 274 33921
5007
1156
Main PCB ASSY
3138 178 07391
1054
I/F cable
8238 274 33841
CRT
9301833 90323
1151
72
71
SWIVEL
3138 104 48601
53
112
111
FRONT CABINET
3138 104 49621
41
3138 168 72971
CRT EARTH WIRE
8055
113
44
BASE
3138 104 48601
122
1158
127
49
Key CNTR PCB ASSY
3138 104 06541
3
Pedestial ASSY
3138 107 98401
52
Function knob
3138 104 48631
47
Button power
3138 104 49621
Front cabinet
1
3138 107 97151

Recommended Parts List

Model :107S11/97C CM23 GS3

Parts indicated on exploded view

1	3138 107 97151	FRONT CABINET ASSY
41	3138 104 49621	FRONT CABINET
49	3138 104 48631	BUTTON-FUNCTION
47	3138 104 48621	BUTTON POWER
2	3138 107 97161	BACK COVER ASSY
42	3138 104 49631	BACK COVER
3	3138 107 98401	PEDESTAL ASSY
44	3138 104 48611	BASE-PEDESTAL
53	3138 104 48601	SWIVEL-PEDESTAL
1151	9301 833 90323	CRT 17" M41EHN323X160/G341BA
1156	3138 178 07391	23107SGS3-C MAIN PCB ASSY
1157	3138 178 06531	VIDEO PCB ASSY-GS3 COCA+
1158	3138 178 06541	KEY CNTR PCB ASSY-GS3 COCA+
601	3138 117 01640	E-DFU assy (CD-ROM+ Quick Start Guide)
602	3138 117 01657	E-DFU (CD-ROM Disc))
178	3138 105 39455	Quick start guide (Western Europe Languages)
179	3138 105 39132	Quick start(Eastern Europe languages)
450	3138 106 56361	CARTON
451	3138 106 56351	CUSHION-TOP-L
452	3138 106 56341	CUSHION-TOP-R
454	3138 106 56581	PE BAG
1053	3138 118 75251	MAINS CORD (125V)
1054	8238 274 33481	I/F CABLE
1101	2422 086 00208	FUSE T4AH/ 250V
1258	3138 178 06471	EEPROM ASSY(7803)
5113	8238 274 33911	POWER TRANSFORMER
5601	3138 178 77941	LINEARITY COIL
5612	8238 274 33851	L.O.T(LCE)
7101	9322 135 00687	MOS TRANSTER SSP7N60A
7102	9352 251 70112	TEA1504/N1 16P
7112	9337 711 00686	IC TL431
7113	9335 282 90682	IC L7808CT
7114	9334 536 00682	IC L7805CV
7115	9338 268 50126	TRANS BT169B
7501	9352 637 56112	IC TDA4841PS-V2 32P
7701	8238 274 33931	LM2437
7685	9340 258 70126	TRA SIG MPSA44
7801	9352 639 54112	IC P83C380AER/066 42P
7803	9322 126 62682	IC M24C16-BN6 8P
7804	9322 098 98682	IC ST24LC21FB1

Parts list

	863900010107	107S11/97C CM23 GS3 COCA+ 70K
1	313810351721	FAMILY BOARD
1	313810165371	H/S - VIDEO
1	313811566351	LABEL
1	313810797151	FRONT CABINET ASSY-CM26 OEM
2	313810797161	BACK COVER ASSY
2	313810165591	CLIP-R
3	313810165601	CLIP-L
3	313810798401	PEDESTAL ASSY
34	313810795301	HEAT SINK ASSY
41	313810449621	FRONT CABINET
42	313810449631	BACK COVER
44	313810448611	BASE
47	313810448621	BUTTON-POWER
49	313810448631	BUTTON-FUNCTION
51	313810449601	SCREW COVER
52	313810450691	WASHER-POWER BUTTON
53	313810448601	SWIVEL
54	313810340032	INSULATING PLATE
55	313810321731	INSULATING PLATE (16X31)
56	313810445821	POWER SWITCH BAR
57	313810445691	HOUSING COVER
60	313810449481	FOOT RUBBER
71	313810166891	SHIELD-BOTTOM PLATE
72	313810166921	PLATE-LOT
73	313810130871	SPRING (FUSE HOLDER)
74	313810126261	PIN CM3000
75	313810166232	TOP SHIELD - CM23 105S
76	313810165431	SHIELD BTM
91	313810132061	HEAT SINK - POWER
92	313810131951	HEAT SINK - HOR.
93	313810131961	HEAT SINK - VER.
104	313810320263	CABLE TIE
106	313810450711	WIRE CLIP
111	313810163952	CRT MOUNTING WASHER
112	313810041181	TAP TITE SCREW W/WASHER
113	313810166551	PLATE-CRT
116	253819700002	HI-LO SCREW 3.5X15
121	313810041571	SCREW CWSO 3X8 ZL
122	313810040981	SCREW 3.5X9
123	313810041331	PAN HEAD WITH WASHER
124	313810040841	TAPPING SCREW
125	313810041571	SCREW CWSO 3X8 ZL
126	313810040201	TAPPING SCREW W/WASHER
126	313810040201	TAPPING SCREW W/WASHER
127	313810132181	SPRING - POWER BUTTON
128	313810131471	SPRING
129	313810164641	SPRING CLIP
130	313810130871	SPRING (FUSE HOLDER)
131	61105900002	EXTRUDED BAR
132	132252643001	FLUX SOLD ALPHA RF800 B
133	132251149002	ISOPROPANOL COLOURLESS
134	63899500005	60/40 NRG SOLDER WR 0.05
135	63899500006	60/40 NRG SOLDER WIRE 0.062
136	132250497401	SILICON GREASE DC4
137	133805100109	LACQUER (WHITE PAINT)
138	132252437602	GLUE FOR SMD LOCTITE 3609
139	123810078004	GLUE JETMELT 3748-VO-TC
139	123810078004	GLUE JETMELT 3748-VO-TC
152	283806290083	RUBBER BAND
172	313810600352	FAMILY SHEET
173	313810600121	FAMILY SHEET - SERVICE
174	313810600471	FAMILY SHEET
175	282206240595	INK CARTRIDGE - EP-T
201	313811566201	RATING LABEL
211	313811562841	PRODUCT TRACEABILITY LABEL
212	313811566211	LABEL(GS7S(P))
450	313810656361	CARTON
451	313810656351	CUSHION - LEFT
452	313810656341	CUSHION - RIGHT
454	313810656581	PE BAG
455	122210033005	ADHESIVE TAPE 19 M/M
456	122210078022	ADH TAPE PETP 0.035 X 50
457	123810078007	ADH TAPE PET 0.065X75
601	313811701641	E-D.F.U Assy
602	313811701653	E-D.F.U(CD-ROM Disc)
178	313810539451	SETTING UP GUIDE
1050	313817806451	23107SGS3-P SEMIFINISHED SET
1053	313811875251	MAINS CORD
1054	823827433841	I/F CABLE
1101▲	242208600208	FUSE T4AH 250V
1104	242213207402	RELAY SDT -SS-112DM
1106	243812800183	SWITCH
1111	243803410056	AC INLET
1113	243802500208	WAFER 2P
1151	930183390323	CRT 17" M41EHN 323X160/G341BA
1152	313818804071	23107SGS3-C ALL CHA.KITS
1153	332214489801	SPOILER
1156	313817807391	23107SGS3-C MAIN PCB ASSY
1157	313817806531	VIDEO PCB ASSY-GS3 COCA+
1158	313817806541	KEY CNTR PCB ASSY-GS3 COCA+
1252	313817806001	H-O/P TRANS ASSY -COCA+
1253	313817804941	POWERTRANS ASSY CACA+(7101
1255	313817804951	VERT IC ASSY -COCA+ (7401)
1258	313817806471	EEPROM ASSY GS7S(p) (7803)
1301	243803100072	CON BM V 12P M 2.5 625/635 B
1302	313817806741	VIDEO IC ASSY -COCA+(LM2437)
1402	243803100116	CON BM V 03P M 2.50
1601	313810020993	CONNECTOR 4P 2.35 DIA J101
1604	243803100061	CON BM V 2P M 2.5 625/635 B
1681	243803100097	CON BM V 2P M 2.5
1703	243802500085	1P CONN. 2.35 DIA - J10
1712	313817877651	1P WAFER 2.0 DIA
1715	242250080041	CON BM CRT V 10P F DAF B
1800	243803100167	CON BM IC V 42P F 1.778 DIL B
1801	243803100063	CON BM V 4P M 2.5 625/635 B
1806	243854300061	RES XTL 12MHZ 30P HC49U B
1891	243812800196	SWI TACT H EQU. TO 5 GY 160G S
1892	243812800196	SWI TACT H EQU. TO 5 GY 160G S
1893	243812800196	SWI TACT H EQU. TO 5 GY 160G S
1894	243812800196	SWI TACT H EQU. TO 5 GY 160G S
1895	243812800196	SWI TACT H EQU. TO 5 GY 160G S
─┤├─		
2103	202030790006	ACROSS LINE CAP 250V 1UF PM20
2104	202055490139	CERSAF NSB 250V S 4N7 PM20 B
2105	202055490139	CERSAF NSB 250V S 4N7 PM20 B
2106	203803500105	ELCAP LXK 400V S 150U PM20 B
2107	203830250229	CAP MPOL 250V S 10N PM5 A
2111	225260214316	CER2 DC X7R 2KV S 330P PM10 A
2112▲	202055490138	CERSAF NSA 250V S 4N7 PM20 B
2113	203803453101	ELCAP S 16V 100UF PM20 2E
2116	223891016649	CER2 0805 X7R 25V 100N PM10 R
2118	223891016649	CER2 0805 X7R 25V 100N PM10 R
2121	202055290807	CERC DC 50V 1N0 PM10
2122	203803454229	ELCAP S 25V 22UF PM20 2E T
2123	203803456109	ELCAP S 50V 10UF PM20 2E
2132	203830150157	CAP PP PPN 100V S 5N6 PM2 A
2133	202055290817	CERC DC 50V 5N6 PM10
2134	225260808011	CERC DC X7R 500V S 100P PM10 A
2135	203830250229	CAP MPOL 250V S 10N PM5 A
2138	823827426421	NP CAP 16V 33UF PM20 2E T
2141	203803454479	ELCAP S 25V 47UF PM20 2E T
2142	203803500083	ELCAP SK 25V S 1000U PM20 B
2151	203803500032	ELCAP 150UF 100V PM20 2E B
2151	203803500032	ELCAP 150UF 100V PM20 2E B
2152	203803192479	ELCAP 160V 47UF PM20 105DEG C
2153	203803132102	ELCAP S 16V 1000UF PM20 2E B
2154	203803132102	ELCAP S 16V 1000UF PM20 2E B
2155	203803132102	ELCAP S 16V 1000UF PM20 2E B
2301	223891016649	CER2 0805 X7R 25V 100N PM10 R
2302	223891016649	CER2 0805 X7R 25V 100N PM10 R
2304	223886115221	CAP 220PF 0805 SMD
2305	223886115221	CAP 220PF 0805 SMD
2307	223891016649	CER2 0805 X7R 25V 100N PM10 R
2308	222259016627	CER2 0805 X7R 50V 10N COL R
2309	223891016649	CER2 0805 X7R 25V 100N PM10 R
2310	222259016627	CER2 0805 X7R 50V 10N COL R
2311	222259016627	CER2 0805 X7R 50V 10N COL R
2312	223891016649	CER2 0805 X7R 25V 100N PM10 R
2316	222286112478	CER1 0805 NPO 50V 4P7 PM0P25
2317	222286112478	CER1 0805 NPO 50V 4P7 PM0P25
2318	222286112478	CER1 0805 NPO 50V 4P7 PM0P25
2319	222286112479	CER1 0805 NPO 50V 47P COL R
2322	222291016647	CER2 0805 X7R 25V 68N PM10
2323	222259016627	CER2 0805 X7R 50V 10N COL R
2324	203803453221	ELCAP S 16V 220UF PM20 2E
2325	223891016649	CER2 0805 X7R 25V 100N PM10 R
2401	202055290803	CERC DC 50V 470P PM10 2E
2402	203803423471	ELCAP S 16V 470UF PM20 2E B
2403	203830250094	MEF CAP 100V 47N PM10 2E
2404	203803458229	ELCAP S 100V 22MU PM20 2E T
2406	203830250099	POLCAP 100V 470N PM10 2E
2411	203803423471	ELCAP S 16V 470UF PM20 2E B
2412	222259016614	CER2 0805 X7R 63V 1N PM10 R
2501	203803453101	ELCAP S 16V 100UF PM20 2E
2505	203803453331	ELCAP S 16V 330UF PM20 2E T
2506	203830150186	PPN 100V 8N2 PM5 T
2507	223891016649	CER2 0805 X7R 25V 100N PM10 R
2508	203830250218	MEF CAP 10N 100V PM2 2E
2509	202055290798	CERC DC 50V 220P PM10
2511	203830150157	CAP PP PPN 100V S 5N6 PM2 A
2512	222259018814	SMD 0805 Y5 5V 220N 50V
2513	202055290596	CERC DC NPO 50V 33P PM5 2E T
2516	203803456109	ELCAP S 50V 10UF PM20 2E
2517	223891016649	CER2 0805 X7R 25V 100N PM10 R
2518	203803453229	ELCAP S 16V 22UF PM20 2E
2521	203830250095	MEF CAP 100V 100N PM10 2E
2522	222259018814	SMD 0805 Y5 5V 220N 50V
2523	222259016627	CER2 0805 X7R 50V 10N COL R
2524	203830150136	PPN CAP 100V 3N3 PM5
2525	203803453101	ELCAP S 16V 100UF PM20 2E
2526	203803458109	ELCAP S 100V 10MU PM20 2E T
2527	203803456228	ELCAP S 50V 2UF2 PM20 2E T
2528	222259018814	SMD 0805 Y5 5V 220N 50V
2600	203803192004	ELCAP S 250V 68UF PM20 3E
2601	203803500101	ELCAP 250V 22U PM20 2E VT
2602	203830150206	CAP 10N 250V MPP
2603	203803458109	ELCAP S 100V 10MU PM20 2E T
2603	203803458109	ELCAP S 100V 10MU PM20 2E T
2604	203803458109	ELCAP S 100V 10MU PM20 2E T
2605	203803454479	ELCAP S 25V 47UF PM20 2E T
2606	203830150301	PPN CAP 250V 10N PM5 2E
2607	222259016627	CER2 0805 X7R 50V 10N COL R
2609	203803550209	ELCAP SH 250V S 3U3 PM20 A
2611	203803450477	ELCAP 0.47UF 200V PM20 2E
2612	203830250229	CAP MPOL 250V S 10N PM5 A
2613	202055290821	CERC DC 50V 10N PM10 T
2614	225260214216	CERC CAP DC 2KV 220P PM10 X7R
2615	225260214316	CER2 DC X7R 2KV S 330P PM10 A
2616	202055790155	CER2 DC B 500V S 3N3 PM10 A
2617	203830100119	PPS CAP 1K6V 4N7 PM5
2618	203830100193	PPN CAP 630V 6N8 PM5
2619	203803454479	ELCAP S 25V 47UF PM20 2E T
2621	222259016627	CER2 0805 X7R 50V 10N COL R
2622	222259016627	CER2 0805 X7R 50V 10N COL R
2623	225264116037	CER CAP Z5U 1KV 10N PM10 B
2624	225264116037	CER CAP Z5U 1KV 10N PM10 B
2625	203803300008	ELCAP BP 63V S 3U3 PM20 B
2626	202055790122	CERC 500V 330P PM2 2E T
2627	202055290834	CERC DC 50V 22N P80M20
2628	203803453101	ELCAP S 16V 100UF PM20 2E
2631	203803185229	ELCAP S 100V 22UF PM20 2E T
2651	223891016649	CER2 0805 X7R 25V 100N PM10 R
2652	223891016649	CER2 0805 X7R 25V 100N PM10 R
2653	223891016649	CER2 0805 X7R 25V 100N PM10 R
2656	203803453221	ELCAP S 16V 220UF PM20 2E
2657	203803456109	ELCAP S 50V 10UF PM20 2E
2658	223891016649	CER2 0805 X7R 25V 100N PM10 R
2661	203830100307	MPS CAP 120N 250V PM5 7E
2662	202055790151	CERC DC 500V 1N0 PM10
2663	223891016649	CER2 0805 X7R 25V 100N PM10 R
2664	223891016649	CER2 0805 X7R 25V 100N PM10 R
2665	203830100224	MPS CAP 220N 250V PM5 7E
2666	202055790151	CERC DC 500V 1N0 PM10
2667	223891016649	CER2 0805 X7R 25V 100N PM10 R
2668	203830100226	MPS CAP 680N 250V PM5 9E
2669	202055790151	CERC DC 500V 1N0 PM10
2670	223891016649	CER2 0805 X7R 25V 100N PM10 R
2671	203830250149	MEF CAP 250V 47N PM10 2E
2672	222259016618	SMD C0805 2N2 63V PM10 X7R
2673	222259016618	SMD C0805 2N2 63V PM10 X7R
2674	225260214416	CERC CAP DC 2KV 470P PM10 X7R
2676	203803456109	ELCAP S 50V 10UF PM20 2E
2678	222259016618	SMD C0805 2N2 63V PM10 X7R
2679	203830100225	MPS CAP 270N 250V PM5
2681	222259016632	SMD C0805 22N 63V PM10 X710 R
2682	203803453221	ELCAP S 16V 220UF PM20 2E
2683	203803453221	ELCAP S 16V 220UF PM20 2E
2684	203803456108	ELCAP S 50V 1UF PM20 2E T
2685	222259016614	CER2 0805 X7R 63V 1N PM10 R
2686	203803192009	ELCAP 250V 10U PM20 2E VT
2702	223891016649	CER2 0805 X7R 25V 100N PM10 R
2721	203803458109	ELCAP S 100V 10MU PM20 2E T
2722	222259016641	CER2 0805 X7R 63V 100N PM10 R
2723	203803522801	ELCAP NP 1U/160V 105C NK TYPE
2724	203803458108	ELCAP S 100V 1U PM20 2E T
2725	242254940925	SPARK GAP DSP-201N T
2726	222259016641	CER2 0805 X7R 63V 100N PM10 R
2731	203803522801	ELCAP NP 1U/160V 105C NK TYPE
2732	203803458108	ELCAP S 100V 1U PM20 2E T
2733	242254940925	SPARK GAP DSP-201N T
2751	203803522801	ELCAP NP 1U/160V 105C NK TYPE
2752	203803185108	ELCAP S 100V 1UF PM20 2E T
2753	242254940925	SPARK GAP DSP-201N T
2754	202055790151	CERC DC 500V 1N0 PM10
2755	202055790151	CERC DC 500V 1N0 PM10
2760	223886115471	CAP 470PF 0805 SMD NPO
2761	223891016649	CER2 0805 X7R 25V 100N PM10 R
2762	203803453221	ELCAP S 16V 220UF PM20 2E
2763	223858016623	CAP 4N7F 0805 SMD X7R
2770	203855400003	CER2 DC Y5P 500V S 100P PM10 A
2771	222259016641	CER2 0805 X7R 63V 100N PM10 R
2772	202055790148	CERC DC 500V 680P PM10
2773	203803456109	ELCAP S 50V 10UF PM20 2E
2776	203803458229	ELCAP S 100V 22MU PM20 2E T
2777	203803453221	ELCAP S 16V 220UF PM20 2E
2778	203803453101	ELCAP S 16V 100UF PM20 2E
2779	222286112479	CER1 0805 NPO 50V 47P COL R
2784	225260214416	CERC CAP DC 2KV 470P PM10 X7R
2801	223891016649	CER2 0805 X7R 25V 100N PM10 R
2804	222286112101	SMD CAP 50V 100P
2806	203803454229	ELCAP S 25V 22UF PM20 2E T
2809	223891016649	CER2 0805 X7R 25V 100N PM10 R
2811	203803456108	ELCAP S 50V 1UF PM20 2E T
2812	223891016649	CER2 0805 X7R 25V 100N PM10 R
2813	222286112109	SMD0805NPO 10P 50V +/-5%
2814	203803453101	ELCAP S 16V 100UF PM20 2E
2815	222286112109	SMD0805NPO 10P 50V +/-5%
2816	222286112101	SMD CAP 50V 100P
2817	223891016649	CER2 0805 X7R 25V 100N PM10 R
2819	222286112101	SMD CAP 50V 100P
2821	222259016627	CER2 0805 X7R 50V 10N COL R
2826	223891016649	CER2 0805 X7R 25V 100N PM10 R
2827	222286112101	SMD CAP 50V 100P
2828	202055290603	CERC DC NPO 50V 100P PM5 2E T
2841	203803456228	ELCAP S 50V 2UF2 PM20 2E T
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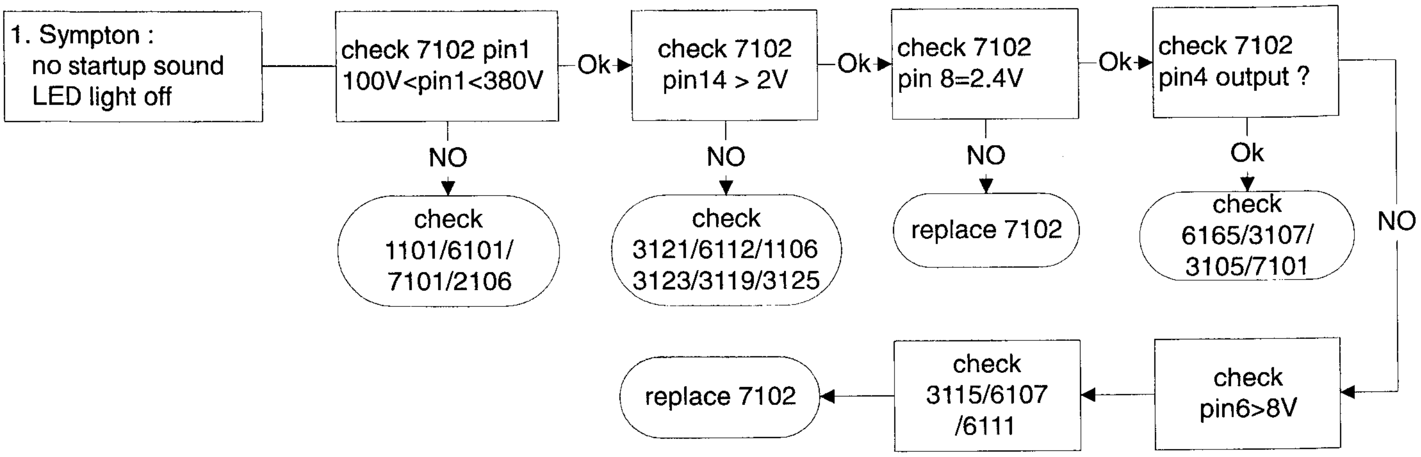
3101	232224213684	METGLAZ RST A VR37 680K PM5
3102	213866000027	NTC DC SCK-104 S 10R PM15
3102	213866000027	NTC DC SCK-104 S 10R PM15
3103	213811614704	RST MFLM MF50S A 470K PM1 A
3104	313810050511	MET FLM RST RSS2J 47K 6E
3105▲	232220733109	RST MFLM NFR25H S 10R PM5PM5
3107	213810113103	RST CRB CR12 A 10K PM5 A
3108	213811273477	CARBRST R25 0.47R PM5
3109	213811273477	CARBRST R25 0.47R PM5
3110▲	232220733221	RST NFR25H 220R PM5
3111	213811614704	RST MFLM MF50S A 470K PM1 A
3112	213811273477	CARBRST R25 0.47R PM5
3113	213811273477	CARBRST R25 0.47R PM5

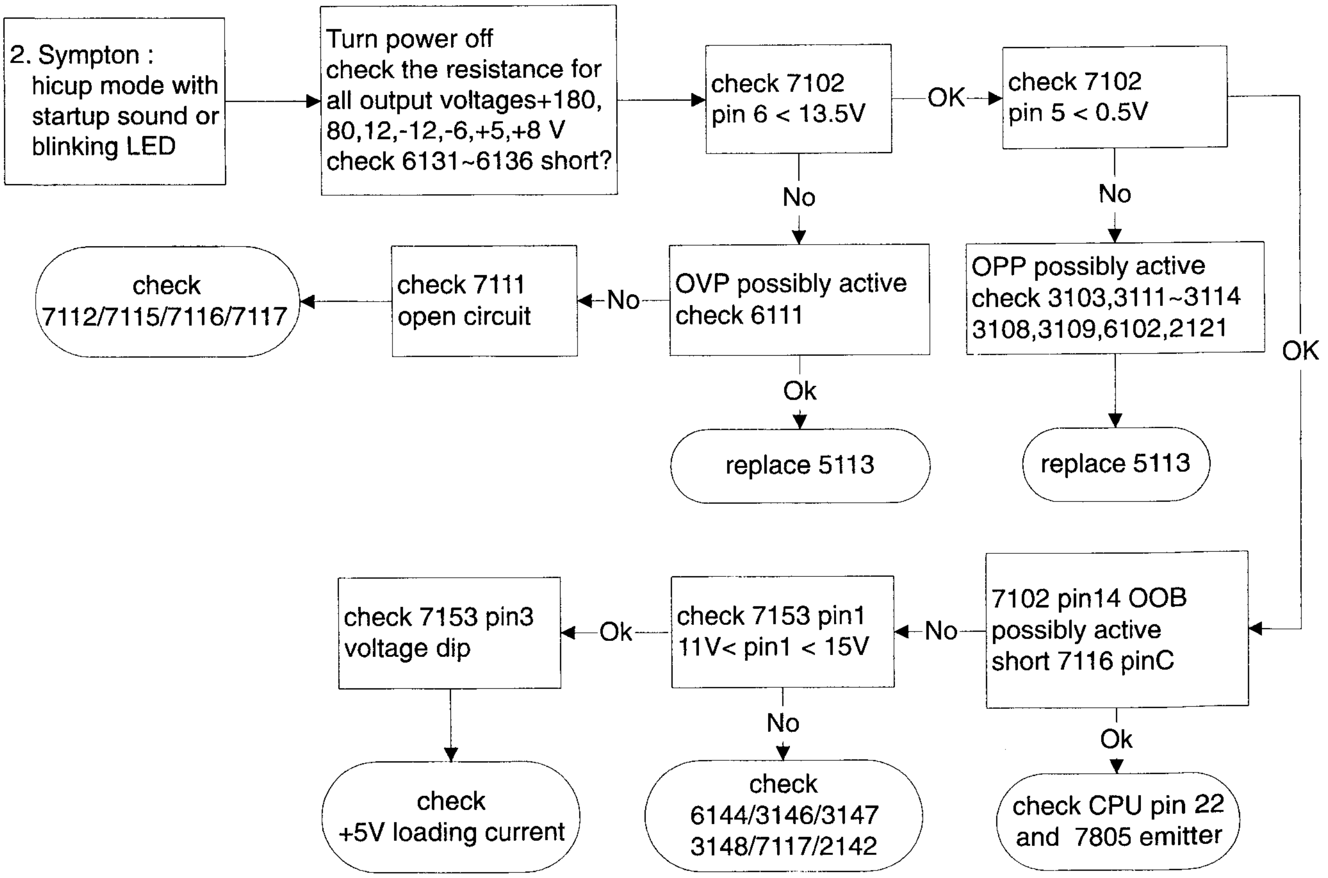
3114	213810113331	RST CRB CR12 A 330R PM5
3115	213811273339	CARBRST FLM CR25 33R PM5
3117	232273061103	RES 10K RC-11 SMD 0805
3118	232273061223	RES 22K 0805 SMD
3119▲	232220733109	RST MFLM NFR25H S 10R PM5
3120▲	232220733221	RST NFR25H 220R PM5
3121	213811604475	RST MFLM MF50S A 4M7 PM5
3122	232273061333	RES 33K 0805 SMD
3123	213811604475	RST MFLM MF50S A 4M7 PM5
3124	213866000036	PTC 9 OHM
3125	213810113334	RST CRB CR12 A 330K PM5
3126	213810113102	RST CRB CR12 A 1K PM5
3127	213811612003	RST MFLM MF50S A 20K PM1
3128	232273061182	RES 1K8 0805 SMD
3129	213836500091	BTRM CER LIN 5KH VG067TL15KB
3131	213811611004	RST MFLM MF50S A 100K PM1
3132	213811613303	RST MFLM MF50S A 33K PM1
3141	213810113102	RST CRB CR12 A 1K PM5
3142	213811611804	RST MFLM MF50S A 180K PM1
3143	213810113102	RST CRB CR12 A 1K PM5
3144	213811615102	RST MFLM MF50S A 5K1 PM1
3145	213836500081	RTRM CER LIN 1K H VG067TL1
3146	213810113471	RST CRB CR12 A 470R PM5
3147	232273061101	RST SM 0805 RC11 100R PM5
3148	232273061102	RST SMC 0805 RC11 1K PM5
3151	213810113332	RST CRB CR12 A 3K3 PM5
3152	213810113223	RST CRB CR12 A 22K PM5
3153	212010592364	MET FLM RST 1W 10K RSS PM5
3154	213811611002	RST MFLM MF50S A 1K PM1
3156	213810113472	RST CRB CR12 A 4K7 PM5
3157	213811611002	RST MFLM MF50S A 1K PM1
3301	213810113759	RST CRB CR12 A 75R PM5
3302	213810113759	RST CRB CR12 A 75R PM5
3303	213810113759	RST CRB CR12 A 75R PM5
3305	232273061472	RST SM 0805 RC11 4K7 PM5
3306	232273061472	RST SM 0805 RC11 4K7 PM5
3307	232273061101	RST SM 0805 RC11 100R PM5
3309	213810113102	RST CRB CR12 A 1K PM5 A
3310	213810113102	RST CRB CR12 A 1K PM5 A
3311	213810113102	RST CRB CR12 A 1K PM5 A
3312	232273061101	RST SM 0805 RC11 100R PM5
3313	232273061101	RST SM 0805 RC11 100R PM5
3314	232273061101	RST SM 0805 RC11 100R PM5
3315	232273061222	RST SM 0805 RC11 2K2 PM5
3316	213811273221	CARBRST FLM CR25 220R PM5
3317	232273061561	RES 560R 0805 SMD
3318	232273061561	RES 560R 0805 SMD
3319	232273061561	RES 560R 0805 SMD
3324	232273061332	RES 3K3 0805 SMD
3325	232273061103	RES 10K RC-11 SMD 0805
3327	232273061562	RES 5.6K RC-11 SMD 0805
3328	232273061562	RES 5.6K RC-11 SMD 0805
3329	232273061562	RES 5.6K RC-11 SMD 0805
3330	232273061394	SMD R0805 390K PM5
3332	213810113101	RST CRB CR12 A 100R PM5
3333	213810113101	RST CRB CR12 A 100R PM5
3334	232273061151	RST SM 0805 RC11 150R PM5
3336	232273091002	RST SM 0805 JUMP. MAX 0R05
3337	232273091002	RST SM 0805 JUMP. MAX 0R05
3338	232273091002	RST SM 0805 JUMP. MAX 0R05
3339	232273091002	RST SM 0805 JUMP. MAX 0R05
3341	232273091002	RST SM 0805 JUMP. MAX 0R05
3342	232273091002	RST SM 0805 JUMP. MAX 0R05
3401▲	232220733478	MET FLM NFR25H 4R7 PM5
3402▲	232220733478	MET FLM NFR25H 4R7 PM5
3403	213810113471	RST CRB CR12 A 470R PM5
3404	213810113471	RST CRB CR12 A 470R PM5
3406	213811612202	RST MFLM MF50S A 2K2 PM1
3407▲	232220733229	RST MFLM NFR25H S 22R PM5
3408▲	232220733229	RST MFLM NFR25H S 22R PM5
3411	213811612201	RST MFLM MF50S A 220R PM1
3412	213811604248	RST MFLM MF-50S A 2R4 PM5
3413	213811604248	RST MFLM MF-50S A 2R4 PM5
3414	213811611009	RST MFLM MF50S A 10R PM1
3415	213811604228	RST MFLM MF50S A 2R2 PM5
3416	213811612202	RST MFLM MF50S A 2K2 PM1
3421	213810113221	RST CRB CR12 A 220R PM5
3501	213810113472	RST CRB CR12 A 4K7 PM5
3502	213810113683	RST CRB CR12 A 68K PM5
3503	213811615603	RST MFLM MF50S A 56K PM1
3504	213811612203	RST MFLM MF50S A 22K PM1
3507	232273061472	RST SM 0805 RC11 4K7 PM5
3511	213810113473	RST CRB CR12 A 47K PM5
3512	213810113473	RST CRB CR12 A 47K PM5
3513	213810113471	RST CRB CR12 A 470R PM5
3515	213810113153	RST CRB CR12 A 15K PM5
3516	213810113154	RST CRB CR12 A 150K PM5
3517	823827434381	RTRM 200K V VG084TH1V204
3518	213810113104	RST CRB CR12 A 100K PM5
3522▲	232220733478	MET FLM NFR25H 4R7 PM5
3523	213810113332	RST CRB CR12 A 3K3 PM5
3524	213811611302	RST MFLM MF50S A 1K3 PM1
3525	213811612802	RST MFLM MF50S A 2K8 PM1
3527	213810113103	RST CRB CR12 A 10K PM5
3528	213810113822	RST CRB CR12 A 8K2 PM5
3529	213810113473	RST CRB CR12 A 47K PM5
3530	213810113473	RST CRB CR12 A 47K PM5
3531	213811612703	RST MFLM MF50S A 27K PM1
3532	213811611004	RST MFLM MF50S A 100K PM1
3533	232273061183	RST SM 0805 RC 11 18K PM5
3534	213810113681	RST CRB CR12 A 680R PM5
3535	213810113561	RST CRB CR12 A 560R PM5
3536	213810113333	RST CRB CR12 A 33K PM5
3537	232273061222	RST SM 0805 RC11 2K2 PM5
3538	232273061152	RST SM 0805 RC11 1K5 PM5
3541	213810113154	RST CRB CR12 A 150K PM5
3544	213810113473	RST CRB CR12 A 47K PM5
3545	213810113563	RST CRB CR12 A 56K PM5
3546	213810113183	RST CRB CR12 A 18K PM5
3553	213811612203	RST MFLM MF50S A 22K PM1
3554	213811273102	CARBRST FLM CR25 1K0 PM5
3555	213811273102	CARBRST FLM CR25 1K0 PM5
3556	232273061102	RST SMC 0805 RC11 1K PM5
3557	213811618204	RST MFLM MF50S A 820K PM1
3561	213836500076	RTRM CER LIN 10K H VG067TL1
3562	232273061752	RST SM 0805 RC11 7K5 PM5
3563	213810113104	RST CRB CR12 A 100K PM5
3564	213810113222	RST CRB CR12 A 2K2 PM5
3566	213810113153	RST CRB CR12 A 15K PM5
3567	213810113101	RST CRB CR12 A 100R PM5
3568	213810113101	RST CRB CR12 A 100R PM5
3569	213810113471	RST CRB CR12 A 470R PM5
3601▲	232273061223	RES 22K 0805 SMD
3603▲	232220733689	RST FUSE NFR25H S 68R PM5
3604	232273061563	RES 56K 0805 SMD
3605▲	232220733478	MET FLM NFR25H 4R7 PM5
3606	232273061104	RES 100K RC-11 SMD 0805
3607	232220733108	MET FLM RST NFR25H 1R0 PM5
3607▲	232220733108	MET FLM RST NFR25H 1R0 PM5
3608	213811615103	RST MFLM MF50S A 51K PM1
3609	213811604475	RST MFLM MF50S A 4M7 PM5
3610	213811617502	RST MFLM MF50S A 7K5 PM1
3611	213811617502	RST MFLM MF50S A 7K5 PM1
3612	213810113223	RST CRB CR12 A 22K PM5
3613	213810113562	RST CRB CR12 A 5K6 PM5
3614	232273061103	RES 10K RC-11 SMD 0805
3615	232273061471	RST SM 0805 RC11 470R PM5
3616	213811618204	RST MFLM MF50S A 820K PM1
3617	213810113391	RST CRB CR12 A 390R PM5
3618	213811617503	RST MFLM MF50S A 75K PM1
3619▲	232220733108	MET FLM RST NFR25H 1R0 PM5
3620	213811611005	RST MFLM MF50S A 1M PM1
3621	212010592157	MET FLM RST 2W 150R PM5 6E
3622	232224213685	METGLAZ RST A VR37 6M8 PM
3623	213811618202	RST MFLM MF50S A 8K2 PM1
3624	213810113222	RST CRB CR12 A 2K2 PM5
3625	213810500081	RST MOX 3W RSU S 2R2 PM5
3626	213811614709	RST MFLM MF50S A 47R PM1
3627	213810113102	RST CRB CR12 A 1K PM5
3628	232273061103	RES 10K RC-11 SMD 0805
3629	213810113101	RST CRB CR12 A 100R PM5
3630	213811618202	RST MFLM MF50S A 8K2 PM1
3631▲	232220733109	RST MFLM NFR25H S 10R PM5
3632▲	232220733109	RST MFLM NFR25H S 10R PM5
3633	232273061223	RES 22K 0805 SMD
3634	232273061222	RST SM 0805 RC11 2K2 PM5
3635	232273061223	RES 22K 0805 SMD
3636	232273061472	RST SM 0805 RC11 4K7 PM5
3637	232273061102	RST SMC 0805 RC11 1K PM5
3638	232273061103	RES 10K RC-11 SMD 0805
3639	232273061101	RST SM 0805 RC11 100R PM5
3640▲	232220733478	MET FLM NFR25H 4R7 PM5
3642	212010592403	MET FLM RSS1J 1W 180R PM5
3643	213811612009	RES MF50S 1/2W 20R PM1
3644	213811611009	RST MFLM MF50S A 10R PM1
3645	232224213104	METGLAZ RST A VR37 100K
3646	213811614704	RST MFLM MF50S A 470K PM1
3647	213811614704	RST MFLM MF50S A 470K PM1
3648	213811611005	RST MFLM MF50S A 1M PM1
3649	213811612009	RES MF50S 1/2W 20R PM1
3650	213810113221	RST CRB CR12 A 220R PM5
3652	232273061102	RST SMC 0805 RC11 1K PM5
3653	232273061562	RES 5.6K RC-11 SMD 0805
3654	232273061222	RST SM 0805 RC11 2K2 PM5
3655	213811612209	RST MFLM MF50S A 22R PM1
3656	213811612009	RES MF50S 1/2W 20R PM1
3657	213810113473	RST CRB CR12 A 47K PM5
3658	213810113473	RST CRB CR12 A 47K PM5
3659	232273061681	RC11 680R 0805 SMD
3661	213811611004	RST MFLM MF50S A 100K PM1
3662	213811614703	RST MFLM MF50S A 47K PM1
3663	213810113471	RST CRB CR12 A 470R PM5
3664	232273061154	RST SM 0805 RC11 150K PM5
3665	232273061103	RES 10K RC-11 SMD 0805
3666	213810113223	RST CRB CR12 A 22K PM5
3667	213811611004	RST MFLM MF50S A 100K PM1
3668	213811614703	RST MFLM MF50S A 47K PM1
3671	213810113223	RST CRB CR12 A 22K PM5
3672	232273061103	RES 10K RC-11 SMD 0805
3673	213810113471	RST CRB CR12 A 470R PM5
3674	232273061154	RST SM 0805 RC11 150K PM5
3675	213811611004	RST MFLM MF50S A 100K PM1
3676	213810113223	RST CRB CR12 A 22K PM5
3677	213811614703	RST MFLM MF50S A 47K PM1
3678	232273061103	RES 10K RC-11 SMD 0805
3679	213810113471	RST CRB CR12 A 470R PM5
3680	232273061154	RST SM 0805 RC11 150K PM5
3681	232220733109	RST MFLM NFR25H S 10R PM5
3682	213811273754	CARBRST FLM CR25 750K PM5
3683	213811611603	RST MFLM MF50S A 16K Pm1
3684	213810113105	RST CRB CR12 A 1M PM5 A
3685	213810113823	RST CRB CR12 A 82K PM5 A
3686	213811612203	RST MFLM MF50S A 22K PM1
3687	213811613903	RST MFLM MF50S A 39K PM1
3688	213811614303	RST MFLM MF50S A 43K PM1
3689	232273061222	RST SM 0805 RC11 2K2 PM5
3691	213810113103	RST CRB CR12 A 10K PM5
3692	213810113103	RST CRB CR12 A 10K PM5
3693	213810113752	RST CRB CR12 A 7K5 Pm5
3694	232273061272	RES 2K7 0805 SMD
3695	232273061102	RST SMC 0805 RC11 1K PM5 T
3696	213811614709	RST MFLM MF50S A 47R PM1 A
3698▲	232220733109	RST MFLM NFR25H S 10R PM5PM5
3699	213836500076	RTRM CER LIN 10K H VG067TL1 B
3703	232273061109	RES 10R 0805 SMD
3704	213810113471	RST CRB CR12 A 470R PM5 A
3705	213810113471	RST CRB CR12 A 470R PM5 A
3706	213810113471	RST CRB CR12 A 470R PM5 A
3713	232273061109	RES 10R 0805 SMD
3716	232273061109	RES 10R 0805 SMD
3718	213810113479	RST CRB CR12 A 47R PM5 A
3719	213810113479	RST CRB CR12 A 47R PM5 A
3720	213810113479	RST CRB CR12 A 47R PM5 A
3721	212010128829	C.C RES 1/2W 82R PM10
3722	213810113105	RST CRB CR12 A 1M PM5 A
3723	213810113152	RST CRB CR12 A 1K5 PM5 A
3724	213811611503	RST MFLM MF50S A 15K PM1 A
3725	232273061224	RST SMD 0805 RC11 220K PM5 R
3726	213811273473	CARBRST FLM CR25 47K PM5
3727	213810113153	RST CRB CR12 A 15K PM5 A
3728	213810113181	RST CRB CR12 A 180R PM5 A
3729	213810113479	RST CRB CR12 A 47R PM5 A
3731	212010128829	C.C RES 1/2W 82R PM10
3732	213810113105	RST CRB CR12 A 1M PM5 A
3733	213810113152	RST CRB CR12 A 1K5 PM5 A
3734	213811611503	RST MFLM MF50S A 15K PM1 A
3735	232273061224	RST SMD 0805 RC11 220K PM5 R
3736	213811273473	CARBRST FLM CR25 47K PM5
3737	213810113153	RST CRB CR12 A 15K PM5 A
3738	213810113181	RST CRB CR12 A 180R PM5 A
3739	232273061109	RES 10R 0805 SMD
3740	232273061109	RES 10R 0805 SMD
3741	232273061105	RES 1M RC-11 SMD 0805 T
3742	232273061105	RES 1M RC-11 SMD 0805 T
3743	232273061109	RES 10R 0805 SMD
3751	212010128829	C.C RES 1/2W 82R PM10
3752	213810113105	RST CRB CR12 A 1M PM5 A
3753	213810113152	RST CRB CR12 A 1K5 PM5 A
3754	213811611503	RST MFLM MF50S A 15K PM1 A
3755	232273061224	RST SMD 0805 RC11 220K PM5 R
3756	213811273473	CARBRST FLM CR25 47K PM5
3757	213810113153	RST CRB CR12 A 15K PM5 A
3758	232273061181	RES 180R 0805 SMD
3761	213810113102	RST CRB CR12 A 1K PM5 A
3762	232273061103	RES 10K RC-11 SMD 0805 T
3763	232273061332	RES 3K3 0805 SMD
3764	232273061472	RST SM 0805 RC11 4K7 PM5 R
3765	232273061682	RES 6K8 0805 SMD
3766	232273091002	RST SM 0805 JUMP. MAX 0R05 T
3767	213810113472	RST CRB CR12 A 4K7 PM5 A
3771	212010128152	CARBRST COMP 1/2W 1K5 PM10
3772	212010128153	CARBRST COMP 1/2W 15K PM10
3773	213811612201	RST MFLM MF50S A 220R PM1 A
3776	213810113101	RST CRB CR12 A 100R PM5 A
3777	213810113101	RST CRB CR12 A 100R PM5 A
3778	213810113102	RST CRB CR12 A 1K PM5 A
3779▲	232220733228	RST FUSE NFR25H 2R2 PM5
3801	213811612403	RST MFLM MF50S A 24K PM1 A
3802	232273061472	RST SM 0805 RC11 4K7 PM5 R
3803	232273061393	RES 39K RC-11 SMD 0805 T
3804	213810113103	RST CRB CR12 A 10K PM5 A
3807	232273061472	RST SM 0805 RC11 4K7 PM5 R
3808	232273061472	RST SM 0805 RC11 4K7 PM5 R
3809	232273061472	RST SM 0805 RC11 4K7 PM5 R
3811	213810113103	RST CRB CR12 A 10K PM5 A
3812	213810113472	RST CRB CR12 A 4K7 PM5 A
3813	213810113472	RST CRB CR12 A 4K7 PM5 A
3814	213810113472	RST CRB CR12 A 4K7 PM5 A
3815	213810113121	RST CRB CR12 A 120R PM5 A
3816	213810113121	RST CRB CR12 A 120R PM5 A
3817	213810113103	RST CRB CR12 A 10K PM5 A
3818	213810113101	RST CRB CR12 A 100R PM5 A
3821	232273061472	RST SM 0805 RC11 4K7 PM5 R
3822	232273061472	RST SM 0805 RC11 4K7 PM5 R
3823	232273061472	RST SM 0805 RC11 4K7 PM5 R
3824	232273061472	RST SM 0805 RC11 4K7 PM5 R
3825	232273061472	RST SM 0805 RC11 4K7 PM5 R
3826	213810113101	RST CRB CR12 A 100R PM5 A
3827	232273061103	RES 10K RC-11 SMD 0805 T
3828	213810113101	RST CRB CR12 A 100R PM5 A
3829	213810113101	RST CRB CR12 A 100R PM5 A
3833	213810113222	RST CRB CR12 A 2K2 PM5 A
3834	232273061332	RES 3K3 0805 SMD
3835	232273061103	RES 10K RC-11 SMD 0805 T
3836	213811611003	RST MFLM MF50S A 10K PM1 A
3837	213810113472	RST CRB CR12 A 4K7 PM5 A
3838	232273061101	RST SM 0805 RC11 100R PM5 R
3841	232273061101	RST SM 0805 RC11 100R PM5 R
3842	232273061101	RST SM 0805 RC11 100R PM5 R
3859	213810113101	RST CRB CR12 A 100R PM5 A

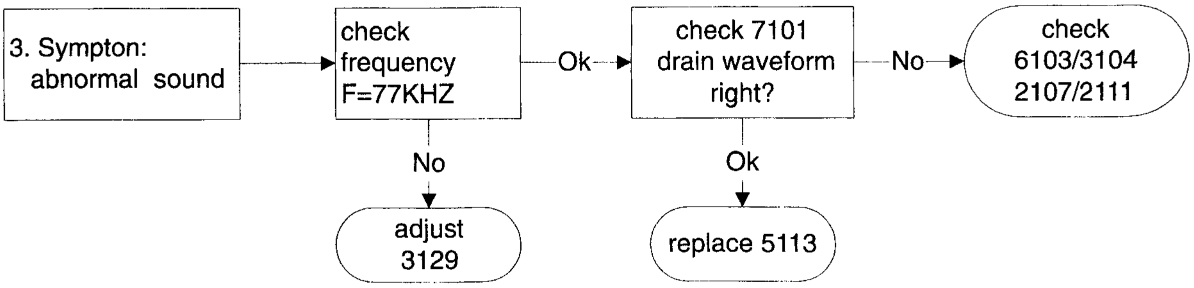
3863	213810113472	RST CRB CR12 A 4K7 PM5 A
3865	213810113102	RST CRB CR12 A 1K PM5 A
3869	213810113272	RST CRB CR12 A 2K7 PM5 A
3891	213811611004	RST MFLM MF50S A 100K PM1
3892	213811615603	RST MFLM MF50S A 56K PM1
3893	213811611503	RST MFLM MF50S A 15K PM1
3894	213811612003	RST MFLM MF50S A 20K PM1
3895	213811612403	RST MFLM MF50S A 24K PM1 A
5007	823827433921	DEGAUSSING COIL
5008	313817876731	ROTATION COIL MARKING : 8423
5102	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5104	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5106	313817879161	BAR COIL 7U5H PM10
5108▲	313812871291	LINE FILTER
5111	313817879161	BAR COIL 7U5H PM10
5113▲	823827433911	POWER TRANSFORMER
5114	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5123	242253594971	DRUM CHOKE COIL 100UH
5124	242253594971	DRUM CHOKE COIL 100UH
5125	242253594971	DRUM CHOKE COIL 100UH
5301	242253597608	COIL 1MUH8 PM10
5601	313817877941	LINEARITY COIL
5603	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5604	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5605	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5606	313812871701	BRIDG COIL 110UH
5607	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5608	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5611	242253597416	COIL 33MUH PM10
5612	823827433851	L.O.T. (LCE)
5613	313817875991	DRUM CHOKE COIL 6MH
5615	313812875441	HOR. DRIVER TRANSFORMER
5621	242253594973	DRUM CHOKE COIL 3.7MHB
5671	313817877931	DAF XFMR 54A-8076
5701	242253597608	COIL 1MUH8 PM10
5702	242253597608	COIL 1MUH8 PM10
5721	242253594472	COIL 0.47UH PM20
5732	242253594472	COIL 0.47UH PM20
5752	242253594472	COIL 0.47UH PM20
5761	242253597416	COIL 33MUH PM10
5771	243853598058	IND FXD BEAD EMI 100 MHZ 80R
5772	313816872621	BEAD COIL (BF30TA-2.5X3X1B)
5773	313816872621	BEAD COIL (BF30TA-2.5X3X1B)
5774	313816872621	BEAD COIL (BF30TA-2.5X3X1B)
5775	242253597608	COIL 1MUH8 PM10
5776	242253597608	COIL 1MUH8 PM10
5778	242253597608	COIL 1MUH8 PM10
5779	242253597608	COIL 1MUH8 PM10
5781	242253594971	DRUM CHOKE COIL 100UH
5786	242253597608	COIL 1MUH8 PM10
6101	932205814682	BRIDGE GBU4K
6102	319801027591	DIODE BZX79-C75(UAW)
6103	933497950683	DIODE RGP10J (GI)
6106	319801010071	DIODE BAV21 (UAW)
6107	319801010071	DIODE BAV21 (UAW)
6111	319801022481	DIODE BZX79-C2V4 (UAW)
6112	319801027591	DIODE BZX79-C75(UAW)
6113	933913910115	SMD DIODE BAS32L
6114	933913910115	SMD DIODE BAS32L
6118	933913910115	SMD DIODE BAS32L
6131	933818500133	DIODE BYM26C
6132	933751660683	DIODE RGP10D (GI)
6133	933818500133	DIODE BYM26C
6134	933543490133	DIO REC BYV27-50
6135	933543500133	DIO REC BYV27-100
6136	933751660683	DIODE RGP10D (GI)
6141	933751660683	DIODE RGP10D (GI)
6142	933497950683	DIODE RGP10J (GI)
6143	933913910115	SMD DIODE BAS32L
6144	319801021591	DIODE BZX79-C15 (UAW)
6146	933913910115	SMD DIODE BAS32L
6165	319801021591	DIODE BZX79-C15 (UAW)
6301	319801025681	DIODE BZX79-C5V6 (UAW)
6302	319801025681	DIODE BZX79-C5V6 (UAW)
6303	319801025681	DIODE BZX79-C5V6 (UAW)
6304	319801025681	DIODE BZX79-C5V6 (UAW)
6305	319801028281	DIODE BZX79-C8V2 (UAW)
6401	933543500133	DIO REC BYV27-100
6402	933500710133	DIODE BZV85-C18
6405	933500710133	DIODE BZV85-C18
6501	319801021191	DIODE BZX79-C11V
6511	933751660683	DIODE RGP10D (GI)
6512	933913910115	SMD DIODE BAS32L
6514	933913910115	SMD DIODE BAS32L
6517	319801010011	DIODE 1N4148 (UAW)
6521	933913910115	SMD DIODE BAS32L
6600	823827433831	DIODE DMV32
6601	319801010071	DIODE BAV21 (UAW)
6602	319801021591	DIODE BZX79-C15 (UAW)
6603	932205787683	DIODE EGP20G
6604	933751660683	DIODE RGP10D (GI)
6605	933751660683	DIODE RGP10D (GI)
6606	933497950683	DIODE RGP10J (GI)
6607	319801010011	DIODE 1N4148 (UAW)
6608	319801025181	DIODE BZX79-C5V1 (UAW)
6609	933913910115	SMD DIODE BAS32L
6611	933751660683	DIODE RGP10D (GI)
6612	933543490133	DIO REC BYV27-50
6613	933783720683	DIODE RGP10M
6615	319801021591	DIODE BZX79-C15 (UAW)
6616	319801021591	DIODE BZX79-C15 (UAW)
6661	319801021591	DIODE BZX79-C15 (UAW)
6664	319801021591	DIODE BZX79-C15 (UAW)
6666	319801021591	DIODE BZX79-C15 (UAW)
6681	319801023381	DIODE BZX79-C3V3 (UAW)
6721	319801010531	SMD DIODE BAV103
6722	319801010071	DIODE BAV21 (UAW)
6724	319801010531	SMD DIODE BAV103
6731	319801010531	SMD DIODE BAV103
6732	319801010071	DIODE BAV21 (UAW)
6734	319801010531	SMD DIODE BAV103
6751	319801010071	DIODE BAV21 (UAW)
6752	319801010071	DIODE BAV21 (UAW)
6754	319801010531	SMD DIODE BAV103
6771	933751660683	DIODE RGP10D (GI)
6772	319801025181	DIODE BZX79-C5V1 (UAW)
6773	319801010011	DIODE 1N4148 (UAW)
6774	319801010011	DIODE 1N4148 (UAW)
6775	319801010011	DIODE 1N4148 (UAW)
6801	319801010011	DIODE 1N4148 (UAW)
6802	319801010011	DIODE 1N4148 (UAW)
6811	933913910115	SMD DIODE BAS32L
6891	823827433771	LED L-3WYGW
7101	932213500687	MOS TRANSTER SSP7N60A
7102	935225170112	IC TEA1504/N1 16P
7103	319802043591	TRANS. BC338-40
7111▲	932214014667	PHOTOCOUPLER TCET1103G 4P
7112	933771100686	IC TL431CLPRP 3P
7113	933528290682	IC MC7808CT 3P
7114	933453600682	IC MC7805CT 3P
7115	933826850126	TRANS BT169B
7116	319802043011	TRANS BF422 (UAW)
7117	319802040081	TRANS BC548C (UAW)
7118	319802040041	TRANS BC547C (UAW)
7301	935261372112	IC TDA4886/V1 24P
7304	823827434421	OSD IC MTV018-27
7322	319802040081	TRANS BC548C (UAW)
7401	932214436687	IC TDA8177F 7P
7501	935263756112	IC TDA4841PS-V2 32P
7502	319802043311	TRANS PH2369 (UAW)
7503	319802043021	TRANS BF423 (UAW)
7505	319802043311	TRANS PH2369 (UAW)
7506	319802040081	TRANS BC548C (UAW)
7508	319802040161	TRANS BC558C (UAW)
7511	319802040081	TRANS BC548C (UAW)
7512	319802040081	TRANS BC548C (UAW)
7601	319802043591	TRANS. BC338-40
7602	319802043491	TRANS BC328-40
7603	932209021687	FET POW IRF9620
7604	319802040081	TRANS BC548C (UAW)
7605	934003960126	TRANS BSN254A
7606	934040790127	TRANSTER BU4522AF
7607	933567130126	TRANS BC517
7608	933567120126	TRANS BC516
7611	319801042201	TRANS BC858C (UAW)
7612	319801042081	TRANS BC848C (UAW)
7613	931101033687	TRA MOW TIP122
7614	319802043591	TRANS. BC338-40
7615	319802040081	TRANS BC548C (UAW)
7616	319802040081	TRANS BC548C (UAW)
7617	319802043011	TRANS BF422 (UAW)
7618	319802040161	TRANS BC558C (UAW)
7621	933393510602	DUAL OP AMP LM358N
7651	932206750676	TRA SIG BF420 S (TOSJ)
7652	932213309687	IRF640A
7661	932206750676	TRA SIG BF420 S (TOSJ)
7662	932213309687	IRF640A
7671	932206750676	TRA SIG BF420 S (TOSJ)
7672	932213309687	IRF640A
7682	319802043811	TRANS BC638 (UAW)
7683	319802043771	TRANS BC637 (UAW)
7685	934025870126	TRA SIG MPSA44
7701	823827433931	IC LM2437
7721	319802043011	TRANS BF422 (UAW)
7722	319802043011	TRANS BF422 (UAW)
7731	319802043011	TRANS BF422 (UAW)
7732	319802043011	TRANS BF422 (UAW)
7751	319802043011	TRANS BF422 (UAW)
7752	319802043011	TRANS BF422 (UAW)
7761	319802040081	TRANS BC548C (UAW)
7801	935260676112	IC P87C380AER/F 42P
7801	935263954112	IC P83C280AER/066 42P
7802	319802040081	TRANS BC548C (UAW)
7803	932212662682	IC M24C16-BN6 8P
7804	932209898682	IC ST24LC21BB6 8P
7805	319802040081	TRANS BC548C (UAW)
7806	319802040161	TRANS BC558C (UAW)

Repair Flow Chart

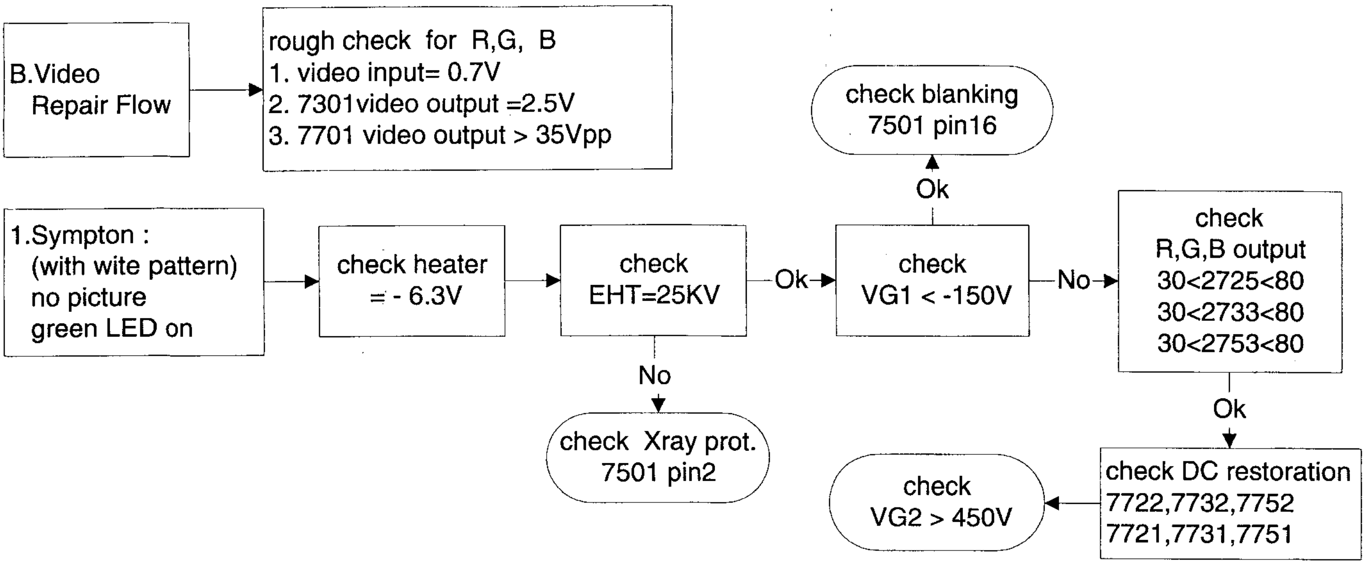
A. Power Supply Failure

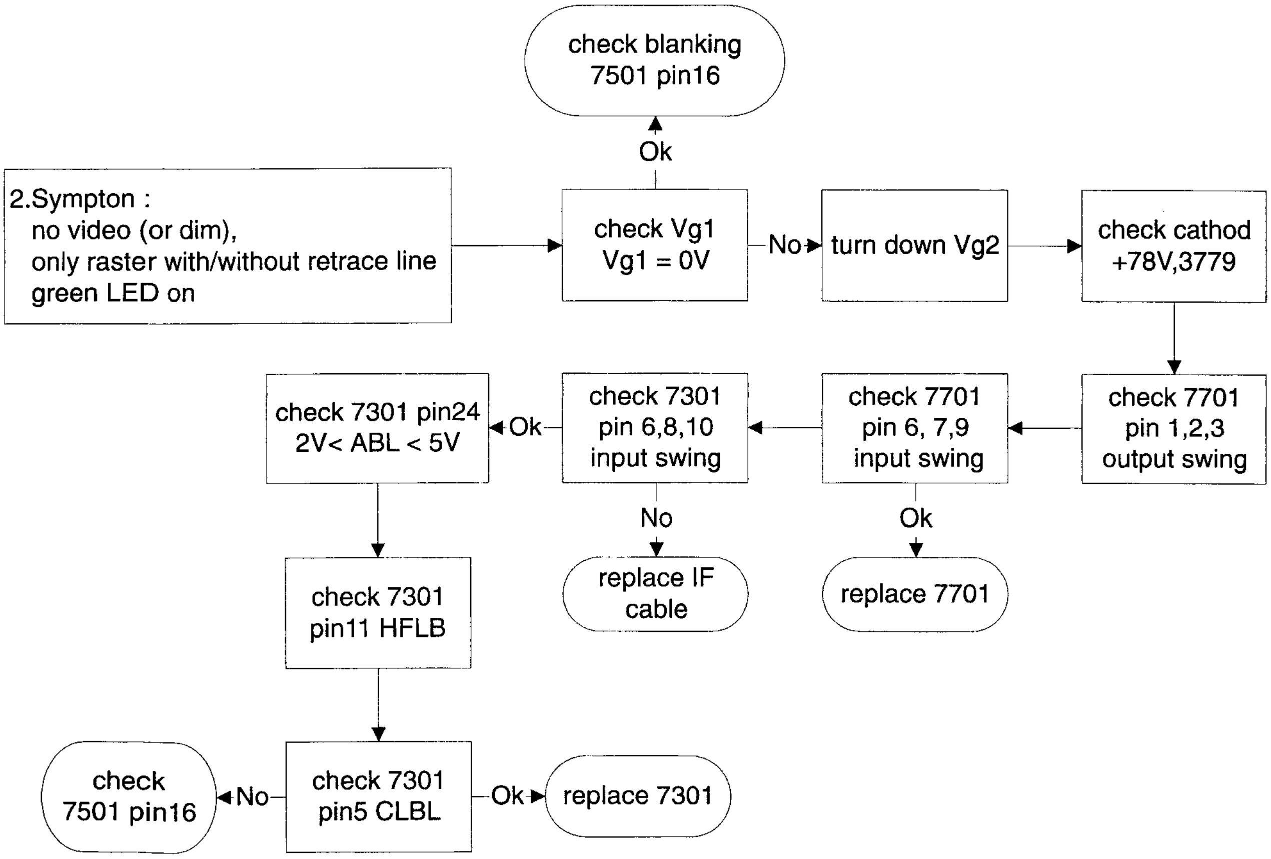

1. Sympton :
no startup sound
LED light off
check 7102 pin1
100V<pin1<380V
Ok
check 7102
pin14 > 2V
Ok
check 7102
pin 8=2.4V
Ok
check 7102
pin4 output ?
NO
check
1101/6101/
7101/2106
NO
check
3121/6112/1106
3123/3119/3125
NO
replace 7102
Ok
check
6165/3107/
3105/7101
NO
check
pin6>8V
check
3115/6107
/6111
replace 7102

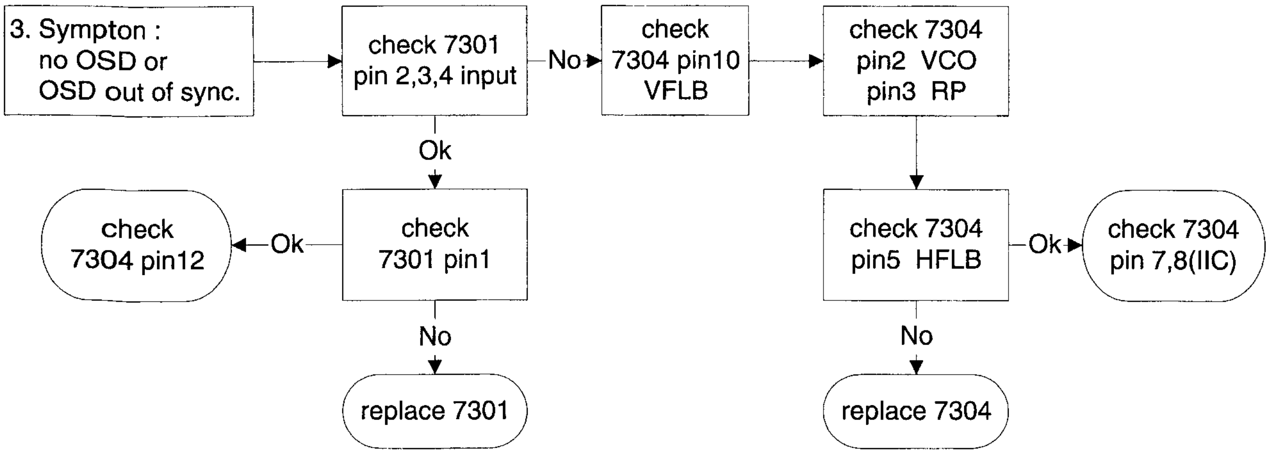

2. Sympton :
hicup mode with
startup sound or
blinking LED
Turn power off
check the resistance for
all output voltages+180,
80,12,-12,-6,+5,+8 V
check 6131~6136 short?
check 7102
pin 6 < 13.5V
OK
check 7102
pin 5 < 0.5V
No
OVP possibly active
check 6111
No
check 7111
open circuit
check
7112/7115/7116/7117
Ok
replace 5113
No
OPP possibly active
check 3103,3111~3114
3108,3109,6102,2121
replace 5113
OK
7102 pin14 OOB
possibly active
short 7116 pinC
No
check 7153 pin1
11V< pin1 < 15V
Ok
check 7153 pin3
voltage dip
check
+5V loading current
No
check
6144/3146/3147
3148/7117/2142
Ok
check CPU pin 22
and 7805 emitter


3. Sympton:
abnormal sound
check
frequency
F=77KHZ
Ok
check 7101
drain waveform
right?
No
check
6103/3104
2107/2111
No
adjust
3129
Ok
replace 5113

Repair Flow Chart

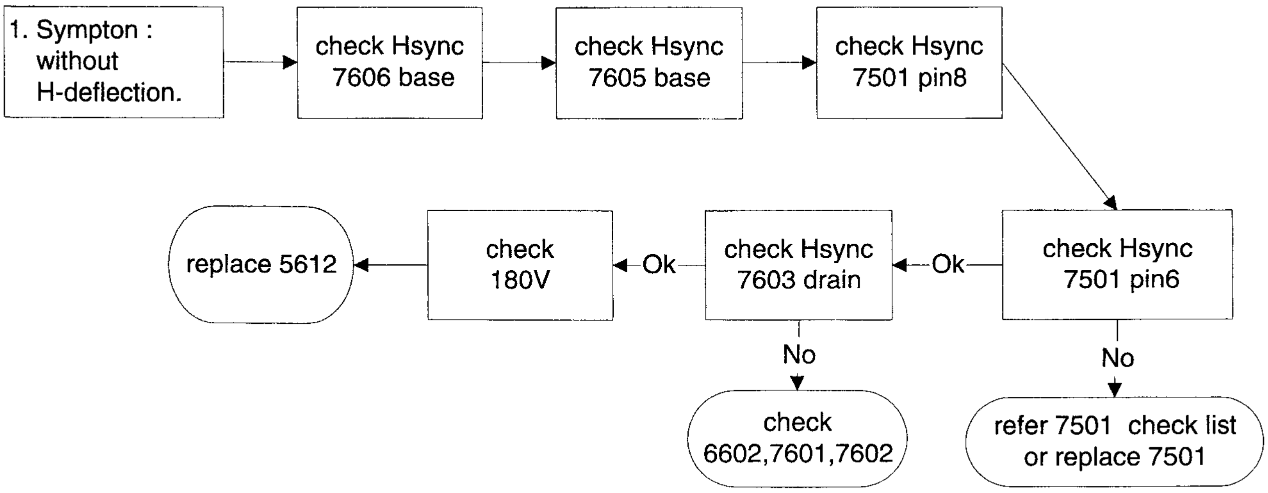

B.Video
Repair Flow
rough check for R,G, B
1. video input= 0.7V
2. 7301video output =2.5V
3. 7701 video output > 35Vpp
1.Sympton :
(with wite pattern)
no picture
green LED on
check heater
= - 6.3V
check
EHT=25KV
Ok
No
check Xray prot.
7501 pin2
check
VG1 < -150V
Ok
check blanking
7501 pin16
No
check
R,G,B output
30<2725<80
30<2733<80
30<2753<80
Ok
check DC restoration
7722,7732,7752
7721,7731,7751
check
VG2 > 450V

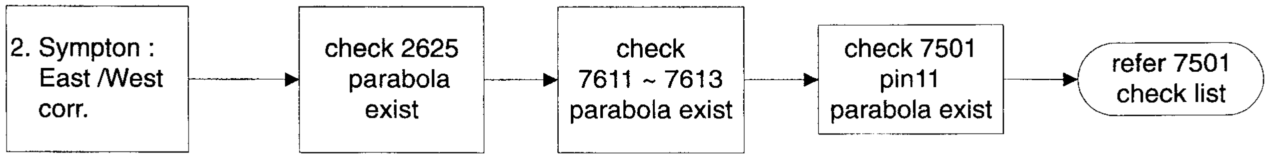

check blanking
7501 pin16
Ok
2.Sympton :
no video (or dim),
only raster with/without retrace line
green LED on
check Vg1
Vg1 = 0V
No
turn down Vg2
check cathod
+78V,3779
check 7701
pin 1,2,3
output swing
check 7701
pin 6, 7,9
input swing
Ok
replace 7701
check 7301
pin 6,8,10
input swing
No
replace IF
cable
Ok
check 7301 pin24
2V< ABL < 5V
check 7301
pin11 HFLB
check 7301
pin5 CLBL
No
check
7501 pin16
Ok
replace 7301

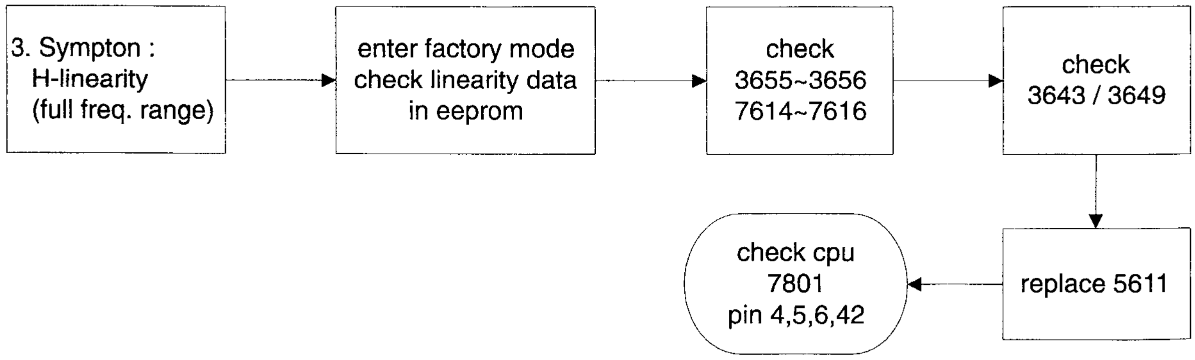

3. Sympton :
no OSD or
OSD out of sync.
check 7301
pin 2,3,4 input
No
check
7304 pin10
VFLB
check 7304
pin2 VCO
pin3 RP
Ok
check
7301 pin1
Ok
check
7304 pin12
No
replace 7301
check 7304
pin5 HFLB
Ok
check 7304
pin 7,8(IIC)
No
replace 7304

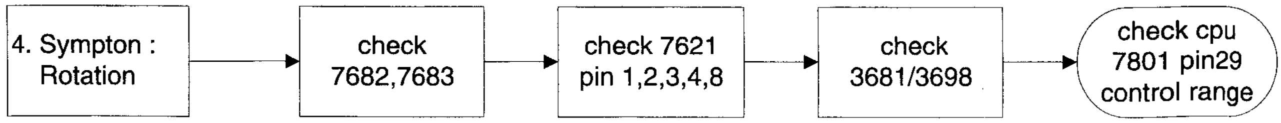
Repair Flow Chart

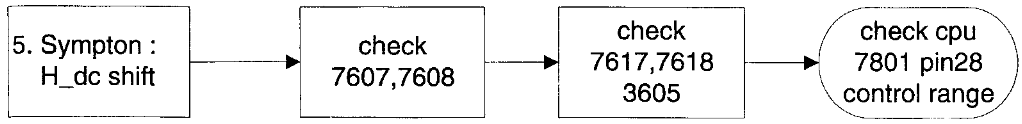
C. Horizontal deflection output repair flow :

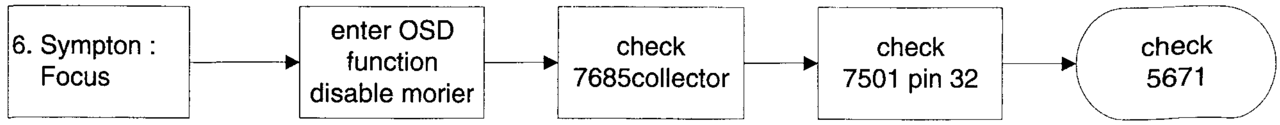

1. Sympton : without H-deflection.
check Hsync 7606 base
check Hsync 7605 base
check Hsync 7501 pin8
check Hsync 7501 pin6
Ok
check Hsync 7603 drain
Ok
check 180V
replace 5612
No
check 6602,7601,7602
No
refer 7501 check list or replace 7501

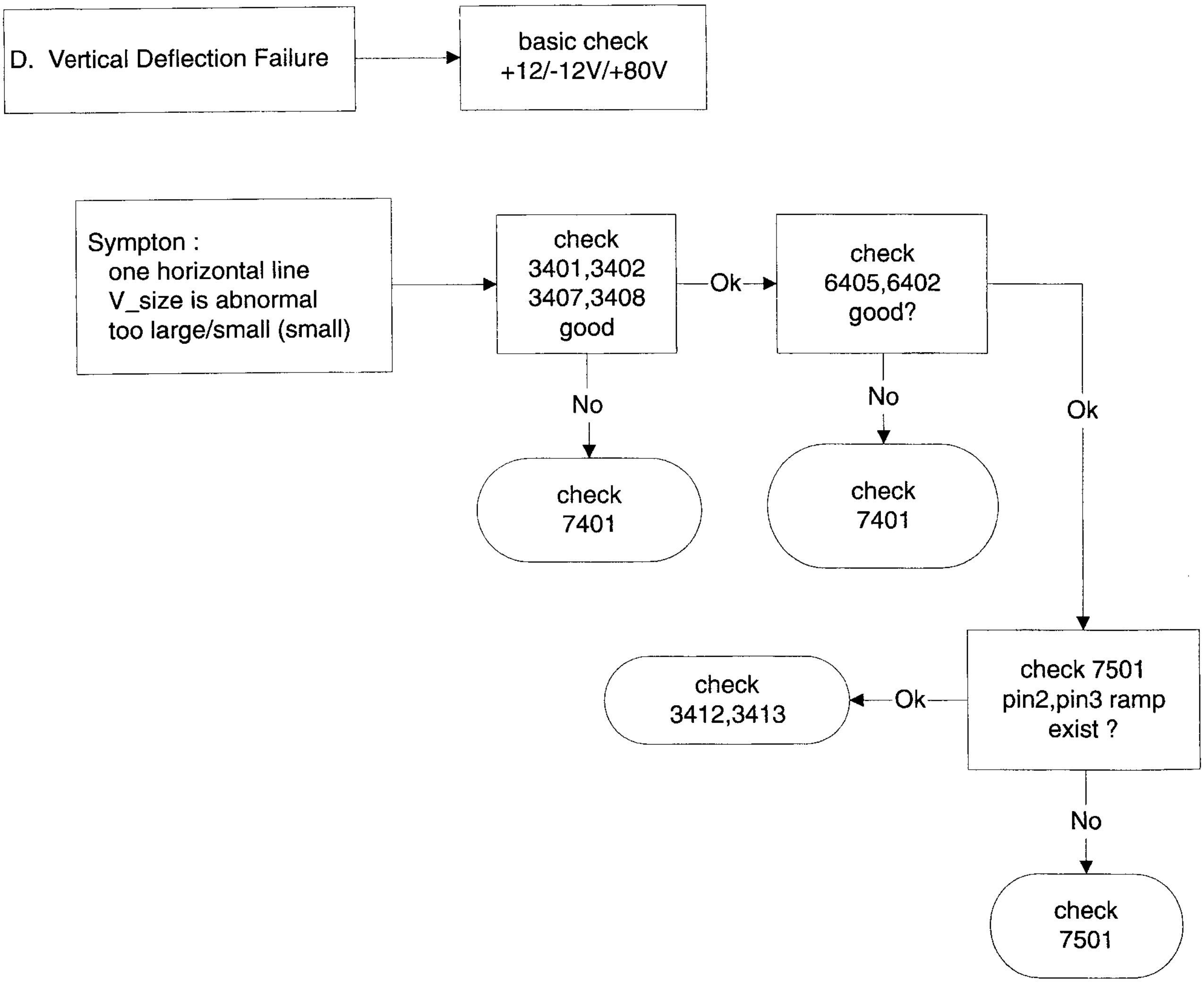

2. Sympton : East /West corr.
check 2625 parabola exist
check 7611 ~ 7613 parabola exist
check 7501 pin11 parabola exist
refer 7501 check list


3. Sympton : H-linearity (full freq. range)
enter factory mode check linearity data in eeprom
check 3655~3656 7614~7616
check 3643 / 3649
replace 5611
check cpu 7801 pin 4,5,6,42

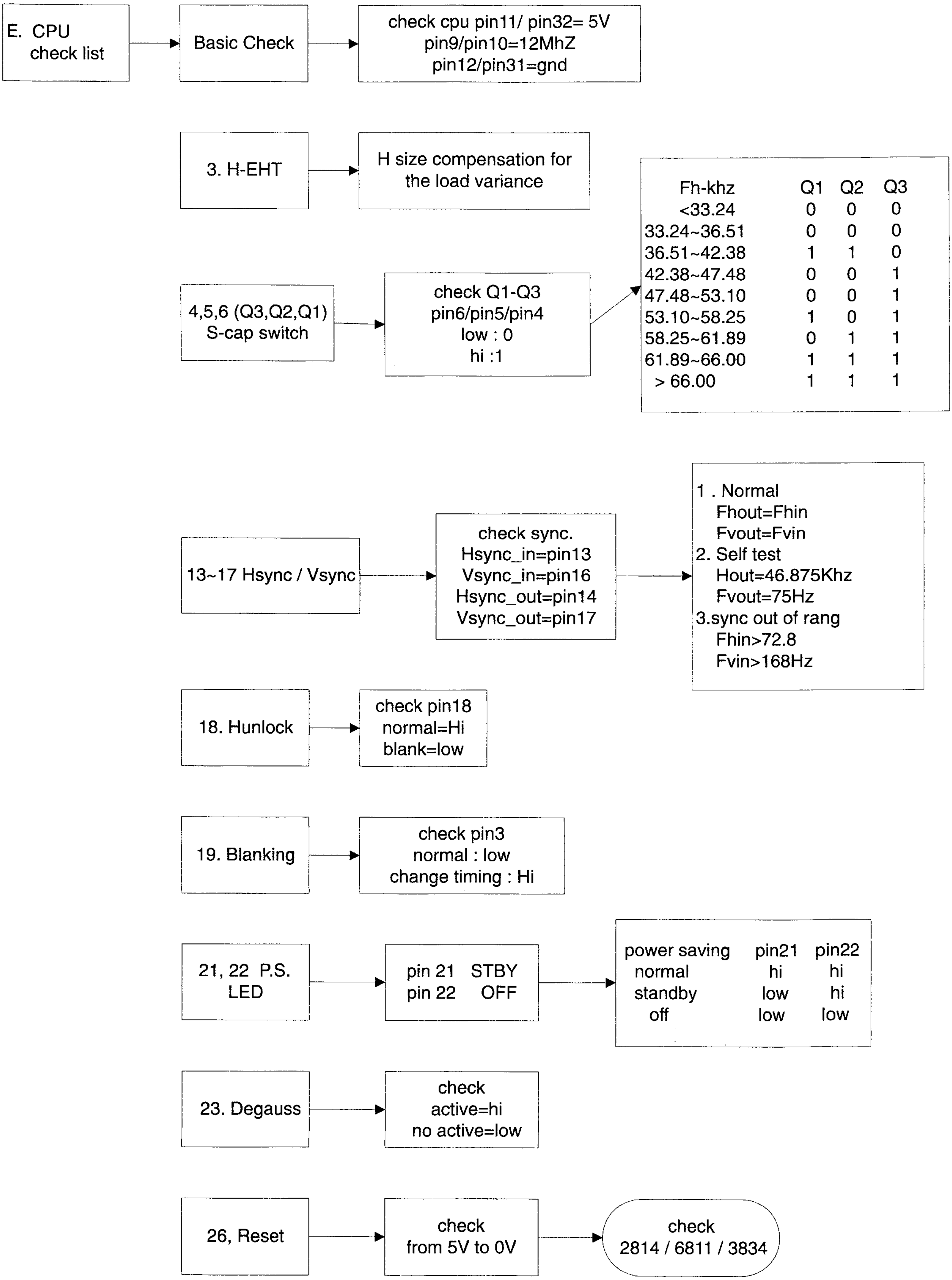

4. Sympton : Rotation
check 7682,7683
check 7621 pin 1,2,3,4,8
check 3681/3698
check cpu 7801 pin29 control range


5. Sympton : H_dc shift
check 7607,7608
check 7617,7618 3605
check cpu 7801 pin28 control range


6. Sympton : Focus
enter OSD function disable morier
check 7685collector
check 7501 pin 32
check 5671


D. Vertical Deflection Failure
basic check +12/-12V/+80V
Sympton : one horizontal line V_size is abnormal too large/small (small)
check 3401,3402 3407,3408 good
Ok
check 6405,6402 good?
No
check 7401
No
check 7401
Ok
check 7501 pin2,pin3 ramp exist ?
Ok
check 3412,3413
No
check 7501

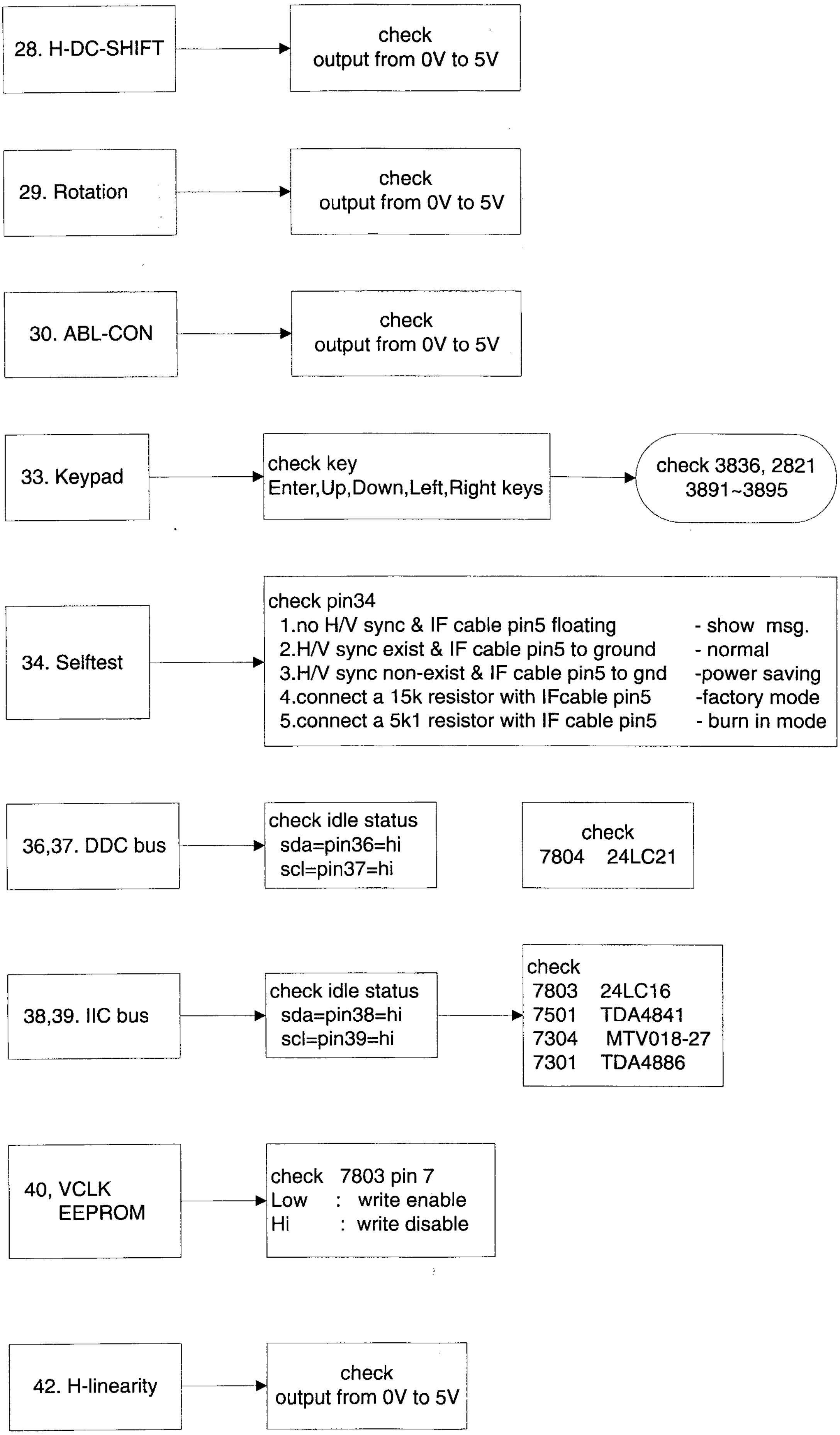
Repair Flow Chart


E. CPU check list
Basic Check
check cpu pin11/ pin32= 5V
pin9/pin10=12MhZ
pin12/pin31=gnd
3. H-EHT
H size compensation for the load variance
4,5,6 (Q3,Q2,Q1)
S-cap switch
check Q1-Q3
pin6/pin5/pin4
low : 0
hi :1
13~17 Hsync / Vsync
check sync.
Hsync_in=pin13
Vsync_in=pin16
Hsync_out=pin14
Vsync_out=pin17
1 . Normal
Fhout=Fhin
Fvout=Fvin
2. Self test
Hout=46.875Khz
Fvout=75Hz
3.sync out of rang
Fhin>72.8
Fvin>168Hz
18. Hunlock
check pin18
normal=Hi
blank=low
19. Blanking
check pin3
normal : low
change timing : Hi
21, 22 P.S.
LED
pin 21 STBY
pin 22 OFF
23. Degauss
check
active=hi
no active=low
26, Reset
check
from 5V to 0V
check
2814 / 6811 / 3834

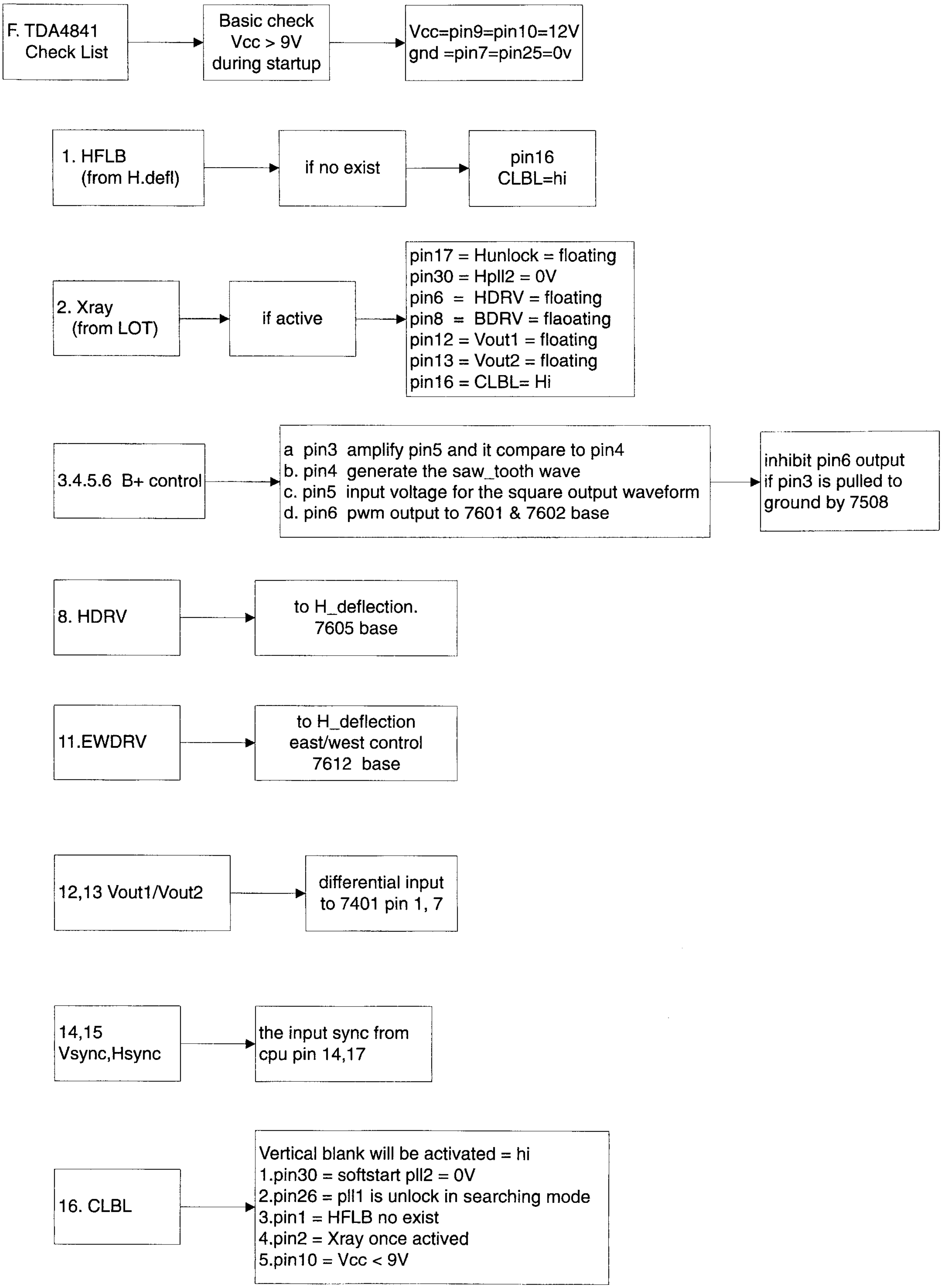
Fh-khz	Q1	Q2	Q3
<33.24	0	0	0
33.24~36.51	0	0	0
36.51~42.38	1	1	0
42.38~47.48	0	0	1
47.48~53.10	0	0	1
53.10~58.25	1	0	1
58.25~61.89	0	1	1
61.89~66.00	1	1	1
> 66.00	1	1	1

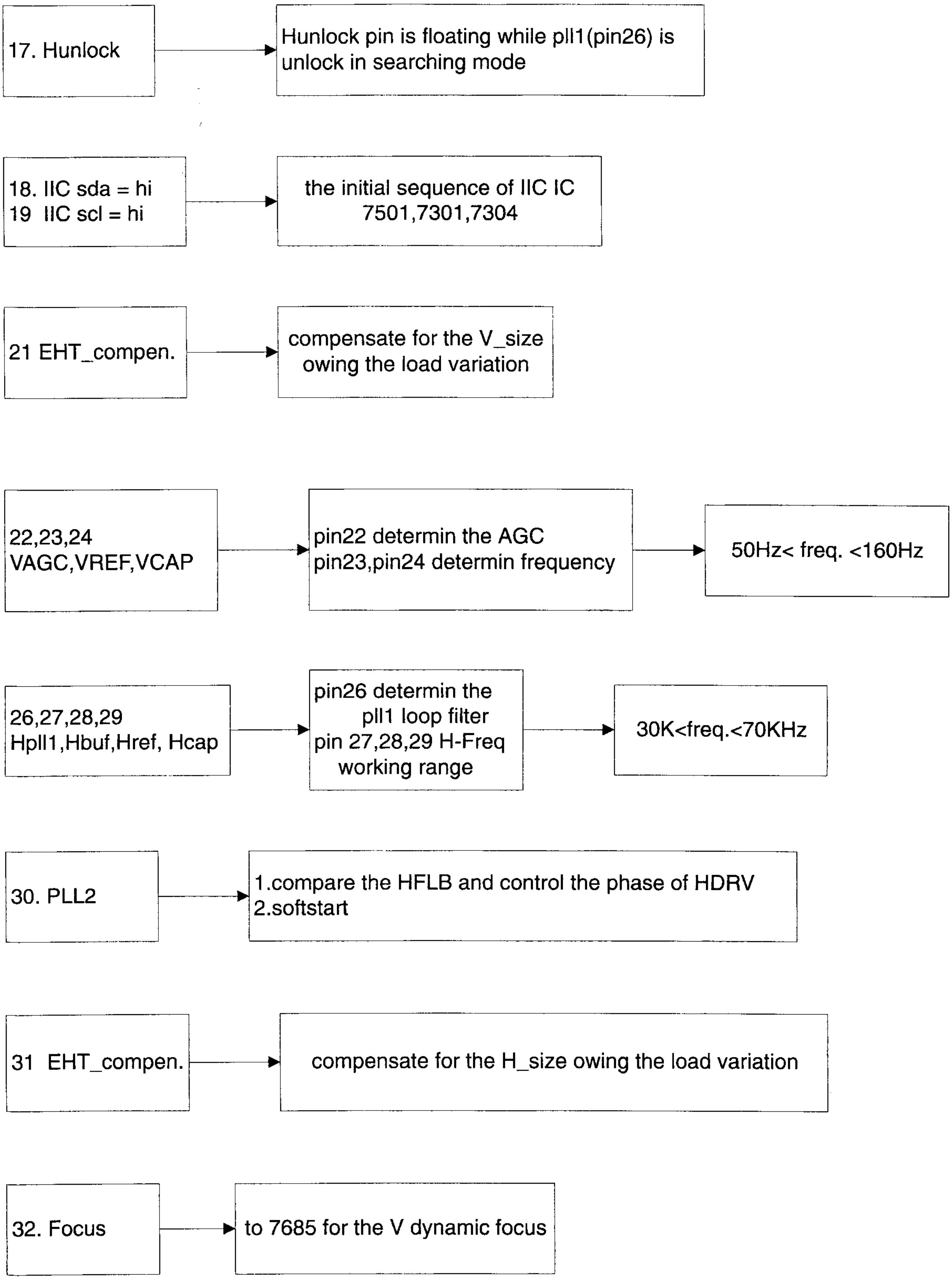
power saving	pin21	pin22
normal	hi	hi
standby	low	hi
off	low	low

Repair Flow Chart


28. H-DC-SHIFT
check
output from 0V to 5V
29. Rotation
check
output from 0V to 5V
30. ABL-CON
check
output from 0V to 5V
33. Keypad
check key
Enter,Up,Down,Left,Right keys
check 3836, 2821
3891~3895
34. Selftest
check pin34
1.no H/V sync & IF cable pin5 floating - show msg.
2.H/V sync exist & IF cable pin5 to ground - normal
3.H/V sync non-exist & IF cable pin5 to gnd -power saving
4.connect a 15k resistor with IFcable pin5 -factory mode
5.connect a 5k1 resistor with IF cable pin5 - burn in mode
36,37. DDC bus
check idle status
sda=pin36=hi
scl=pin37=hi
check
7804 24LC21
38,39. IIC bus
check idle status
sda=pin38=hi
scl=pin39=hi
check
7803 24LC16
7501 TDA4841
7304 MTV018-27
7301 TDA4886
40, VCLK
EEPROM
check 7803 pin 7
Low : write enable
Hi : write disable
42. H-linearity
check
output from 0V to 5V

Repair Flow Chart


F. TDA4841 Check List
Basic check Vcc > 9V during startup
Vcc=pin9=pin10=12V
gnd =pin7=pin25=0v
1. HFLB (from H.defl)
if no exist
pin16 CLBL=hi
2. Xray (from LOT)
if active
pin17 = Hunlock = floating
pin30 = Hpll2 = 0V
pin6 = HDRV = floating
pin8 = BDRV = flaoating
pin12 = Vout1 = floating
pin13 = Vout2 = floating
pin16 = CLBL= Hi
3.4.5.6 B+ control
a pin3 amplify pin5 and it compare to pin4
b. pin4 generate the saw_tooth wave
c. pin5 input voltage for the square output waveform
d. pin6 pwm output to 7601 & 7602 base
inhibit pin6 output if pin3 is pulled to ground by 7508
8. HDRV
to H_deflection. 7605 base
11.EWDRV
to H_deflection east/west control 7612 base
12,13 Vout1/Vout2
differential input to 7401 pin 1, 7
14,15 Vsync,Hsync
the input sync from cpu pin 14,17
16. CLBL
Vertical blank will be activated = hi
1.pin30 = softstart pll2 = 0V
2.pin26 = pll1 is unlock in searching mode
3.pin1 = HFLB no exist
4.pin2 = Xray once actived
5.pin10 = Vcc < 9V


17. Hunlock
Hunlock pin is floating while pll1(pin26) is unlock in searching mode
18. IIC sda = hi
19 IIC scl = hi
the initial sequence of IIC IC 7501,7301,7304
21 EHT_compen.
compensate for the V_size owing the load variation
22,23,24
VAGC,VREF,VCAP
pin22 determin the AGC
pin23,pin24 determin frequency
50Hz< freq. <160Hz
26,27,28,29
Hpll1,Hbuf,Href, Hcap
pin26 determin the pll1 loop filter
pin 27,28,29 H-Freq working range
30K<freq.<70KHz
30. PLL2
1.compare the HFLB and control the phase of HDRV
2.softstart
31 EHT_compen.
compensate for the H_size owing the load variation
32. Focus
to 7685 for the V dynamic focus

PHILIPS

CM2300 COCA+ GS3 17" 70KHz AUTOSCAN COLOUR MONITOR

FEATURES / BENEFITS

- EXTREMELY HIGH MTBF (OVER 75K HRS, EXCLUDING CRT)
- PROFESSIONAL LOOK, WITH NON-FLAMMABLE CABINET (94V-0)
- USER'S CONTROLS
  - . FRONT MOUNTED CONTROLS FOR EASY ACCESS
- BETTER DISPLAY PERFORMANCE
  - . FINER CRT DOT PITCH (0.28 MM)
  - . FULL SCREEN SIZE APPLICATION
  - . REAL MULTI-FREQ.
- POWER SAVING MANAGEMENT SYSTEM
- MAXIMIZED CONTAINER LOADING
- VESA DDC1 AND 2B
- LOW EMISSION MPR II /TCO (optional)

CLASS NO.	17" Cm2300 GS-III CMTR TYPE : 107S11/97C (COCA+) BRAND : PHILIPS (107S-70K)	8639 000 10107	
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1.0 Introduction

This document is related to the 17" AUTOSCAN (VGA above and Max. resolution 1280X1024 by 60HZ refresh) color monitor for world-wide destination.

2.0 General description

The AUTOSCAN analog color monitor is specified as a display peripheral within an IBM PC, PS/2 ,VGA and advance VGA compatible system.

The AUTOSCAN analog color monitor is to operate at horizontal line rates between 30 to 70 KHz and refreshment rate between 50 to 160 Hz, can be applied to all RGB analog computers within this scanning frequencies.

The AUTOSCAN analog color monitor is intended to be a finished product, basically a display device mounted inside a plastic enclosure which provides the aesthetic mechanical, ergonomic and safety requirements.

2.1 General condition

The unit will produce a usable image after switching-on, measurements are to be carried out with a full stabilized set after 30 minutes warm-up at room temperature of 25° C.
Repetitive power on/off cycles are allowed though should be avoided within 4 sec.

3.0 Electrical characteristics

3.1 Signal interface

The AUTOSCAN analog color display has an analog video interface to operates at a multi-frequencies timing in several display modes.

3.1.1 Input requirements

A. Input signals
Video : Analog level
Sync. : Separated sync. with TTL level
Polarity : Positive or negative

B. Signal input level
Video : 0.7 Vp-p 75 ohms (for individual of R,G and B signals must not deviate 0.015 Vp-p from each other for balance of white pattern)
Sync : TTL level
(between 0 and 0.6 V to be considered as low level ,between 2.3 and 5.0 V as high level)

C. Impedance
Video : Terminated with 75 ohms
Sync : Terminated with 4.7K ohms pull down resistors.

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3.1.2 Signals input

The input video signals are applied to the display device through a video cable which is fixed to the monitor (standard cable length 1.5M).

Video input cable :
15 pin D-shell male connector type AMP 211350-1(3 rows) or equivalent, with pin assignment as follows :

Pin assignment of 15P D-SUB connector

Pin nbr.	Assignment
P1	Red video input
P2	Green video input
P3	Blue video input
P4	GND
P5	For selftest (PC Ground)
P6	Red video ground
P7	Green video ground
P8	Blue video ground
P9	Not connected -- No pin
P10	Sync ground
P11	GND
P12	Bi-directional Data (SDA)
P13	H SYNC
P14	V SYNC (VCLK)
P15	Data clock (SCL)

3.1.3 Factory preset modes:

Factory preset modes : 8

	Resolution	H. freq.	V. freq.	H.	V.
1.	720 x 400	31.5 KHz	70Hz (VGA)	-	+
2.	640 x 480	31.47 KHz	60Hz (VGA)	-	-
3.	640 x 480	43.3 KHz	85Hz (VESA)		
4.	800 x 600	46.9 KHz	75Hz (VESA)		
5.	800 x 600	53.674KHz	85Hz (VESA)		
6.	1024 x 768	60.0 KHz	75Hz (VESA)		
7.	1024 x 768	68.7 KHz	85Hz (VESA)		
8.	1280 x 1024	64.0 KHz	60Hz (VESA)		

Factory preload modes : 14

	Resolution	H. freq.		V. freq.
9.	640 x 350	31.5	KHz	70Hz
10.	640 x 350	37.9	KHz	85Hz
11.	640 x 480	37.5	KHz	75Hz
12.	640 x 480	37.9	KHz	72.8Hz
13.	640 x 480	50.6	KHz	100Hz
14.	720 x 400	37.9	KHz	85Hz
15.	800 x 600	37.9	KHz	60Hz
16.	800 x 600	48.1	KHz	72Hz
17.	800 x 600	63.9	KHz	100Hz
18.	832 x 624	49.7	KHz	75Hz
19.	1024 x 468	48.4	KHz	60Hz
20.	1024 x 768	56.5	KHz	70Hz
21.	1152 x 864	67.5	KHz	75Hz
22.	1280 x 960	60	KHz	60Hz

3.2 Timing requirements

The AUTOSCAN color monitor must be capable of displaying standard resolutions within the vertical(refresh) frequency range of 50 to 160 Hz and horizontal scan range of 30 - 70 KHz.

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TIMING FOR CM2300 COCA+ GS3 107S 69K MODELS

REFERENCE PATTERN GENERATOR : CHROMA 2135

* According VESA version 1.0 release 0.6p

Factory preset modes

TABLE 1: 31.469 KHz/70.087 Hz, 720 X 400, pixel=28.325MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 31.774 us	Total size = 14.268 ms
Display size = 25.422 us	Display size = 12.711 ms
Rear porch = 1.907 us	Rear porch = 1.112 ms
Sync width = 3.813 us	Sync width = 0.064 ms
Sync.polarity = -	Sync.polarity = +

TABLE 2: 31.469KHz/59.940 Hz, 640 X 480, pixel=25.175 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 31.778 us	Total size = 16.683 ms
Display size = 25.422 us	Display size = 15.253 ms
Rear porch = 1.907 us	Rear porch = 1.049 ms
Sync width = 3.813 us	Sync width = 0.064 ms
Sync.polarity = -	Sync.polarity = -

TABLE 3: 43.269KHz/85.008 Hz, 640 X 480, pixel=36.000 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 23.111 us	Total size = 11.764 ms
Display size = 17.778 us	Display size = 11.093 ms
Rear porch = 2.222 us	Rear porch = 0.578 ms
Sync width = 1.556 us	Sync width = 0.069 ms
Sync.polarity = -	Sync.polarity = -

TABLE 4: 46.875 KHz/75 Hz, 800 X 600, pixel=49.500 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 21.333 us	Total size = 13.333 ms
Display size = 16.162 us	Display size = 12.800 ms
Rear porch = 3.232 us	Rear porch = 0.448 ms
Sync width = 1.616 us	Sync width = 0.064 ms
Sync.polarity = +	Sync.polarity = +

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TABLE 5: 53.674 KHz/85.061 Hz, 800 X 600, pixel=56.250 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 18.631 us	Total size = 11.756 ms
Display size = 14.222 us	Display size = 11.179 ms
Rear porch = 2.702 us	Rear porch = 0.503 ms
Sync width = 1.138 us	Sync width = 0.056 ms
Sync.polarity = +	Sync.polarity = +

TABLE 6: 60.03 KHz/75 Hz, 1024 X 768, pixel=78.750 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 16.660 us	Total size = 13.328 ms
Display size = 13.003 us	Display size = 12.795 ms
Rear porch = 2.235 us	Rear porch = 0.466 ms
Sync width = 1.219 us	Sync width = 0.050 ms
Sync.polarity = +	Sync.polarity = +

TABLE 7: 63.981 KHz/60 Hz, 1280 X 1024, pixel=108 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 15.630 us	Total size = 16.661 ms
Display size = 11.852 us	Display size = 16.005 ms
Rear porch = 2.296 us	Rear porch = 0.594 ms
Sync width = 1.037 us	Sync width = 0.047 ms
Sync.polarity = +	Sync.polarity = +

TABLE 8: 68.677 KHz/85 Hz, 1024 X 768, pixel=94.500 MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 14.561 us	Total size = 11.765 ms
Display size = 10.836 us	Display size = 11.183 ms
Rear porch = 2.201 us	Rear porch = 0.524 ms
Sync width = 1.016 us	Sync width = 0.044 ms
Sync.polarity = +	Sync.polarity = +

Factory preload modes

TABLE 9: 31.469KHz/70.087 Hz, 640 X 350, pixel=25.175MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 31.778 us	Total size = 14.268 ms
Display size = 25.422 us	Display size = 11.122 ms
Rear porch = 1.907 us	Rear porch = 1.907 ms
Sync width = 3.813 us	Sync width = 0.064 ms
Sync.polarity = +	Sync.polarity = -

TABLE 10: 37.861KHz/85.08 Hz, 640 X 350, pixel=31.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.413 us	Total size = 11.754 ms
Display size = 20.317 us	Display size = 9.244 ms
Rear porch = 3.048 us	Rear porch = 1.585 ms
Sync width = 2.032 us	Sync width = 0.079 ms
Sync.polarity = +	Sync.polarity = -

TABLE 11: 37.5KHz/75 Hz, 640 X 480, pixel=31.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.667 us	Total size = 13.333 ms
Display size = 20.317 us	Display size = 12.8 ms
Rear porch = 3.810 us	Rear porch = 0.427 ms
Sync width = 2.032 us	Sync width = 0.08 ms
Sync.polarity = -	Sync.polarity = -

TABLE 12: 37.861KHz/72.809 Hz, 640 X 480, pixel=31.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 26.413 us	Total size = 13.735 ms
Display size = 20.317 us	Display size = 12.678 ms
Rear porch = 4.064 us	Rear porch = 0.739 ms
Sync width = 1.270 us	Sync width = 0.079 ms
Sync.polarity = -	Sync.polarity = -

TABLE 13: 50.625 KHz/100.049 Hz, 640 X 480, pixel=40.5MHz

Horizontal		Vertical	
Frame border	= 0	Frame border	= 0
Total size	= 19.752 us	Total size	= 9.995 ms
Display size	= 15.802 us	Display size	= 9.481 ms
Rear porch	= 1.975 us	Rear porch	= 0.435 ms
Sync width	= 1.580 us	Sync width	= 0.059 ms
Sync.polarity	= -	Sync.polarity	= -

TABLE 14: 37.927 KHz/85.039 Hz, 720 X 400, pixel=35.5 MHz

Horizontal		Vertical	
Frame border	= 0	Frame border	= 0
Total size	= 26.366 us	Total size	= 11.759 ms
Display size	= 20.282 us	Display size	= 10.546 ms
Rear porch	= 3.042 us	Rear porch	= 1.107 ms
Sync width	= 2.028 us	Sync width	= 0.079 ms
Sync.polarity	= -	Sync.polarity	= +

TABLE 15: 37.879 KHz/60.317 Hz, 800 X 600, pixel=40MHz

Horizontal		Vertical	
Frame border	= 0	Frame border	= 0
Total size	= 26.400 us	Total size	= 16.579 ms
Display size	= 20.000 us	Display size	= 15.840 ms
Rear porch	= 2.200 us	Rear porch	= 0.607 ms
Sync width	= 3.200 us	Sync width	= 0.106 ms
Sync.polarity	= +	Sync.polarity	= +

TABLE 16: 48.077 KHz/72.188 Hz, 800 X 600, pixel=50MHz

Horizontal		Vertical	
Frame border	= 0	Frame border	= 0
Total size	= 20.800 us	Total size	= 13.853 ms
Display size	= 16.000 us	Display size	= 12.480 ms
Rear porch	= 1.280 us	Rear porch	= 0.478 ms
Sync width	= 2.400 us	Sync width	= 0.125 ms
Sync.polarity	= +	Sync.polarity	= +

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TABLE 17: 63.92KHz/100 Hz, 800 X 600, pixel=67.5MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 15.644 us	Total size = 9.997 ms
Display size = 11.852 us	Display size = 9.387 ms
Rear porch = 2.370 us	Rear porch = 0.548 ms
Sync width = 0.948 us	Sync width = 0.047 ms
Sync.polarity = +	Sync.polarity = +

TABLE 18: 49.714KHz/74.534 Hz, 832 X 624, pixel=57.27MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 20.115 us	Total size = 13.417 ms
Display size = 14.528 us	Display size = 12.552 ms
Rear porch = 3.911 us	Rear porch = 0.784 ms
Sync width = 1.118 us	Sync width = 0.060 ms
Sync.polarity = -	Sync.polarity = -

TABLE 19: 48.363 KHz/60.004 Hz, 1024 X 768, pixel=65MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 20.677 us	Total size = 16.666 ms
Display size = 15.754 us	Display size = 15.880 ms
Rear porch = 2.462 us	Rear porch = 0.600 ms
Sync width = 2.092 us	Sync width = 0.124 ms
Sync.polarity = -	Sync.polarity = -

TABLE 20: 56.476KHz/70.069 Hz, 1024 X 768, pixel=75MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 17.707 us	Total size = 14.272 ms
Display size = 13.653 us	Display size = 13.599 ms
Rear porch = 1.920 us	Rear porch = 0.513 ms
Sync width = 1.813 us	Sync width = 0.106 ms
Sync.polarity = -	Sync.polarity =

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TABLE 21: 67.5 KHz/75Hz, 1152 X 864, pixel=108MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 14.815 us	Total size = 13.333 ms
Display size = 10.667 us	Display size = 12.8 ms
Rear porch = 2.370 us	Rear porch = 0.474 ms
Sync width = 1.185 us	Sync width = 0.044 ms
Sync.polarity = +	Sync.polarity = +

TABLE 22: 60 KHz/60 Hz, 1280 X 960, pixel=108MHz

Horizontal	Vertical
Frame border = 0	Frame border = 0
Total size = 16.667 us	Total size = 16.667 ms
Display size = 11.852 us	Display size = 16.000 ms
Rear porch = 2.889 us	Rear porch = 0.600 ms
Sync width = 1.037 us	Sync width = 0.050 ms
Sync.polarity = +	Sync.polarity = +

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3.2.1 Horizontal scanning

Scanning frequency : 30 - 70 KHz
H-shift range : ± 10 mm Min. (for preset modes only)

3.2.2 Vertical scanning

Scanning frequency : 50 - 160 Hz
V-shift range : ± 10 mm min. (for preset modes only)

3.3 Power supply

The display device maintains the specified performance in the range described as bellows :

Type	Mains current	Mains Voltage	Mains freq.
Universal	1.5A Max.	90 - 264 VAC	47 - 63 Hz
230V version	0.7A Max.	195 - 264 VAC	47 - 63 Hz
115V version	1.5A Max.	90 - 132 VAC	60 ± 3 Hz

Power consumption : 90 Watts Max.
Power cord length : 1.5M
Power cord type : 3 leads plug power cord
with protective earth plug or IBM Hooded

3.4 Power saving management system

Mode	Signal			Compliance Requirement	Power	Recovery Time
	H-Sync	V-Sync	Video			
On	Active	Active	Active	Mandatory	≤ 90w	N/A
Stand-by	Inactive	Active	Blanked	Mandatory	≤ 10w	≤ 3 sec.
Suspend	Active	Inactive	Blanked	Mandatory	≤ 10w	≤ 3 sec.
Off	Inactive	Inactive	Blanked	Mandatory	≤ 3w	Normal

Remark: Transition time from "ON" to any power saving mode will have 5 seconds delay.

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3.5 CRT Description

This display unit employs a high resolution CRT complying with the following specifications :

Dimensions	: 17 inches. flat/square screen
Pitch	: 0.27mm dotted with black matrix
Deflection angle	: 90 degrees
Light transmission	: 47% (dark glass)
Face treatment	: Anti-glare, anti-static
Implosion protection	: By P-Mini-rim-band.
EHT	: 25.0 ± 1 KV (Ib=0)
Visible screen area	: 327.2 mm x 245.44mm
CRT Source	: PHILIPS, CPT tube

3.6 RGB Amplifier

3.6.1 Video amplifiers

Dot Rate	: 110 MHz
Over / undershoot	: 10% Max. (Transient response)
Sag	: 5% Max.(pulses of 0.70H)
Black level shift	: 5% Max.

3.6.2 Brightness and Contrast

Reference mode 68.7 KHZ/85 HZ full white pattern.

DISPLAY LIGHT OUTPUT

Brightness	Contrast	Light output (full white)
Minimum	Minimum	No visible
Center	Maximum	30 ± 5 FL.

50mmx50mm block

Brightness at center and contrast at maximum light output is 41+/-6 FL.

3.6.3 Raster light output

Apply 68.7KHz/85Hz mode with no video pattern, set brightness at center click and contrast control at minimum The light output on the screen center should < 0.2FL.

3.7 Variation of image size (For preset modes only)

Due to brightness change : 2.0 % max at 31,5Khz, 37.5Khz
1.0 % max at timing > 37.5 Khz

(Set brightness control at center click, turn contrast control from Min. to Max.)

Due to aging
(25° C, 300 hrs) : ≤ 1.0 %

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Due to mains voltage
variation (10%) : ≤ 1.0 %

3.8 Degaussing

An automatic degaussing circuit is provided which requires no intervention. The degaussing activated at the time of switch on or switch on again after switching off degaussing circuits for longer than 30 minutes.

3.9 Phosphor protection
The display device is sufficiently protected against the burning of phosphors in case of repetitive power cycling or absence of horizontal deflection.

3.10 Low emission requirements (MPR-II)

Items	Band I ELF (rms)	Band II VLF (rms)
Alternating Electric Field	MPR-II < 25 V/M	MPR-II < 2.5V/M
Magnetic Field	MPR-II < 250 nT	MPR-II < 25 nT
Electrostatic Potential	< +/- 500 V	

Band I : 5 to 2K HZ.
Band II : 2K to 400K HZ.
Test procedure according to MPR-II and E.S.P. test method.

3.11 Display data channel : DDC1/2B (VESA STANDARD)

The DDC HEX Data (refer sheet 190) should be written into the DDC IC and MCU EEPROM.

4.0 Display image (CRT facing east)

The monitor is aligned in a magnetic cage having the following magnetic field components :
Northern Hemisphere : H = 0, V = 450 mG, Z = 0
Southern Hemisphere : H = 0, V = -500 mG, Z = 0

Conditions for visual testing, unless otherwise stated:
Input video signal - 700 mVpp cross hatch
Brightness control - center position
Contrast control - maximum position

4.1 Display resolutions
See 3.1.3

GENERAL PRODUCT SPECIFICATION

4.2 Image size (For preset modes only)

The dimensions of guaranteed display area to be measured along the picture center of horizontal and vertical axis of the screen as listed below: (preset modes only, refer to fig. 1)

Width	: 270 ± 3 mm
Height	: 202 ± 3 mm

4.3 Image centering deviation (For preset modes only)

With respect to fig. 2, the target relationships are the following :

$|A-B| \leq 5$ mm $|C-D| \leq 5$ mm

Note : This centering is adjustable by the end-user.

4.4 Picture shift control range (For preset modes only)

H-shift range : 10 mm min.
V-shift range : 10 mm min.

4.5 Picture tilt

With respect to Fig. 3, Tilt to be measured on extremes of center line from bezel.

$|A-B|$: ≤ 2 mm

4.6 Geometrical distortions (For preset modes only)

It is acceptable that pincushion, trapezoid, rhomboid, rotation and various waves distortions must remain within the limits of tolerance as in fig. 4,
where A = B = 2.0 mm.
C = D = 2.0 mm.
The waviness of any vertical or horizontal shall be less than 1.0 mm over a 50 mm distance.

4.7 Image non-linearity pattern with
12 equal blocks along horizontal axis,
10 equal blocks along vertical axis. (see Fig. 1) (For preset modes only)

Overall : 10 % (each horizontal and vertical)

Deviation of Two adjacent block : ≤ 6 %

H. non-linearity =(X. Max. - X. Min.) / (X. Max.) x 100%

V. non-linearity =(Y. Max. - Y. Min.) / (Y. Max.) x 100%

4.8 Mis-convergence

The maximum convergence error to be measured on a white spot or white display line to represents the maximum distance between the energy centers of any two primary colors. (See Fig. 6)

CONVERGENCE SPEC.

Zones	0.28 mm CRT
Zone C	0.15 mm
Zone A	0.25 mm
Zone B	0.35 mm

4.9 Focus check (68.7 KHZ / 85 HZ)

Adjust brightness control to center click and contrast control to get 25 FL at full white pattern , then generate "@" characters to cover entire of the picture the characters should be clearly identified in all display area. (See Fig. 7)

4.10 Luminance uniformity

condition : With full white pattern, set contrast control at maximum position and brightness control at center click position.

The center of the display is 30 FL+/-5. , the Max. deviation of the screen should not exceed 25% .

4.11 White color adjustment

Based on the 1931 CIE chromatic
diagram (x,y)
coordinates of white display on screen center should be:

For 9300° K	X	= 0.283 +/- 0.015
	Y	= 0.297 +/- 0.015
For 6500° K	X	= 0.313 +/- 0.015
	Y	= 0.329 +/- 0.015

Check conditions :

Set brightness control at center click position and
contrast at maximum position.

4.12 Color tracking on full white pattern

To adjust the luminance output from 3 to 30 FL. By turning the contrast control (brightness control at center click position), the color co-ordinates should not deviate more than the following tolerance when compare to display center:

X= X (center) +/- 0.015
Y= Y (center) +/- 0.015

4.13 Purity

Test patterns : Full white / Red / Green / Blue.
Conditions : As stated in item 4.0, the purity must be checked under specific destinations of earth magnetic environments and the monitor to be well degaussed.

After warming-up time of 30 min. , no color stains may occur in above four patterns.

4.14 Moire'e

Condition: Displaying a full white pattern, at any preset mode , the display size to be set as Fig.1
The clouding effect must not rise to disturbing levels in 1/3 of the screen with luminance setting from 15 to 30 FL.

4.15 Blemish
Blemish shall be in accordance with CRT specification.

5.0 Mechanical characteristics

5.1 User controls
- Power ON/OFF switch
- 5 Key digital user control

5.2 Connectors and cables

5.2.1 Power cord type : 3 leads plugable power cord with protective earthed plug or IBM Hooded

Length : 1.5 m +/- 50 mm (exc. connector)
Safety requirements : See following.

	Approval		
Countries	Mains plug	Wire	Connector
Germany	VDE	VDE	VDE
Switzerland	--	SVE	SVE
Belgium	CEBEC	--	--
Sweden	SEMKO	SEMKO	SEMKO
Finland	EI	--	EI
Norway	NEMKO	NEMKO	--
Denmark	DEMKO	DEMKO	DEMKO
Italy	OVE	--	OVE
Netherlands	KEMA	KEMA	KEMA
U.K.	ASTA	HAR	ASTA
U.S.A.	UL	UL	UL
Canada	CSA	CSA	CSA
Australia	SAA	SAA	SAA

CLASS NO.
99-07-02

17" Cm2300 GS-III CMTR
TYPE : 107S11/97C (COCA+)
BRAND : PHILIPS (107S-70K)

8639 000 10107

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5.2.2 Signal cable

Length of video : 1.5 m 50 mm flying with 15 pin PS/2 D-shell socket

5.3 Tilt and swivel base

Tilt angle : 5 forward and 15 Max. backward
Swivel rotation : 90 leftward or rightward

6.0 Environmental characteristics

The following sections to define the interference and susceptibility condition limits that might occur between external environment and the display device.

6.1 Susceptibility of display to external environment

6.1.1 (A) Operating limits

Temperature : 0 C to 40 C Humidity : 10 to 90% (W/O condensation)
Air pressure : 700 ~ 1100 mbar

(B) Non-operating limits (storage)

Temperature : -25 C to 60 C
Humidity : 5 to 95 % (W/O condensation)
Altitude : 300 to 1100 mbar

6.1.2 Transportation packages

A) Carton box

A-1 Size (with pedestal)
496(W) x 518(D) x 495(H)

A-2 Carton paper : double wall AB fute corrugate board, color brown
Bursting : 19.3 kg/cm2 min
Compression : 600 kg min

B) Transportation conditions

B-1 Container loading (separated pedestal)

Q'ty	Container size			
	40'		20'	
	W/ palette		W/ palette	
	Yes	No	Yes	No
Layers	4	4	4	4
Sets per layer	4	4	4	4
Sets per block	16	16	16	16
Blocks per container	24	24	10	10
Total sets	384	384	160	160

B-2 Transportation standards

Standards		EU / Asia versions PHILIPS's UN-D1400	U.S.A. version NSTA
Drop test	Height	61 cm	61 cm
	Sequence	-10 °C for 16 hours, 1 corner, 3 faces Right/Back/Top faces Left/Front/Bottom faces (only for reference)	1 corner. 3 edges. 6 faces
	Result	- Electrical function OK. - Mechanical function OK. - No serious damage in Set.	
Vibration Test	Sequence	a . 5~200Hz. 0.25G operating random vibration 30 min/axis, 3 axes b. 5~200Hz. 0.73 packing random - vibration 30 min/axis, 3 axes	
	Result	- Electrical function OK. - Mechanical function OK. - No serious damage in set.	
Shock test	For design evaluation only. Half sine shock : 120G, <3m sec. 6 shocks Temp. : 23 °C Humidity : 60 % Air pressure : 100 kpa Standard : Mechanical Guideline		

6.2 Display disturbances from external environment

6.2.1 ESD Disturbances

According to EN50082-1 (also refer to IEC801-2 for detail).

6.3 Display disturbances to external environment

The disturbances induced by the display and tolerated by the environment are defined as follows :

6.3.1 Ionizetic radiation

Completely fulfilled International Commission of Radio logical Protection (ICRP) requirement 0.5 mR/Hr.

Actually the set can reach 0.1 mR/Hr.

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6.3.2 EMI
Can comply with FCC part 15, DOC C108.8 and EN55022

7.0 Safety tests

7.1 Dielectric strength (Hi-pot test)
According to IEC950, UL1950 and CSA 22.2 No 950

7.2 Resistance for protective earthing
According to IEC950

7.3 Leakage current
According to IEC950, UL1950 and CSA22.2 No. 950

7.4 Grounding
According to IEC950, UL1950 and CSA22.2 No. 950

8.0 Certifications

8.1 Safety
The monitors comply with the following safety standards:

- IEC950
- UL1950
- DHHS 21 CFR, subchapter J
- CSA-22.2 NO. 950
- GERMANY ZH1/618(GS), ISO 9241-3,-8

8.2 EMI (Electromagnetic Interference)
The monitor comply with the following EMI standards :

- En55022
- FCC Part 15
- DOC C108.8

8.3 Fulfil approbation requirements
Destination basis, set can fulfil following requirements:

Countries	Safety	EMI
Germany	TUV,GS	CE
Sweden	SEMKO	----
Norway	NEMKO	----
Denmark	DEMKO	----
Finland	FIMKO	----
Spain	HOMOLOGATION	CE
UK	BEAB	CE
U.S.A.	UL , DHHS	FCC
Canada	CSA	DOC
Japan	----	VCCI

9.0 Reliability

9.1 Mean time between failures

MTBF to be calculated according to Military standard MIL-HDBK-217C.

MTBF 75,000 Hours (Excluding CRT)

$$\text{PRACTICE of MTBF} = \frac{\text{TOTAL HRS (POWER ON) X TOTAL SETS}}{\text{NBR. OF FAILURE SETS}}$$

10.0 Quality assurance requirements

10.1 Acceptance test

According to MIL-STD-105D level II,
AQL : 0.4 (Major)
: 1.0 (Minor)

Customer acceptance : UAW 0377/40
Criteria

11.0 Service ability

The service ability of this monitor should fulfil the requirements which are prescribed in UAW-0346 and must be checked with the check list UAT - 0361

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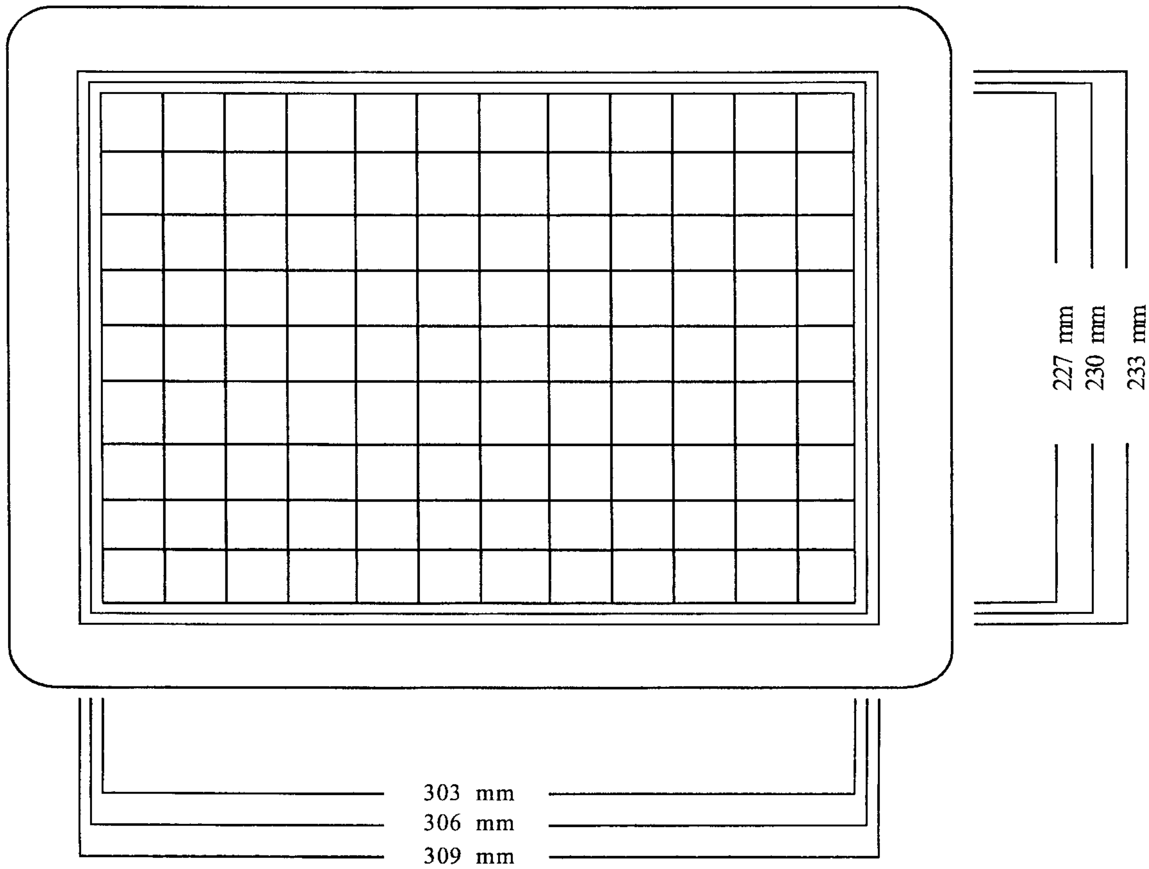
303 mm
306 mm
309 mm
227 mm
230 mm
233 mm

FIG-1 IMAGE DIMENSION

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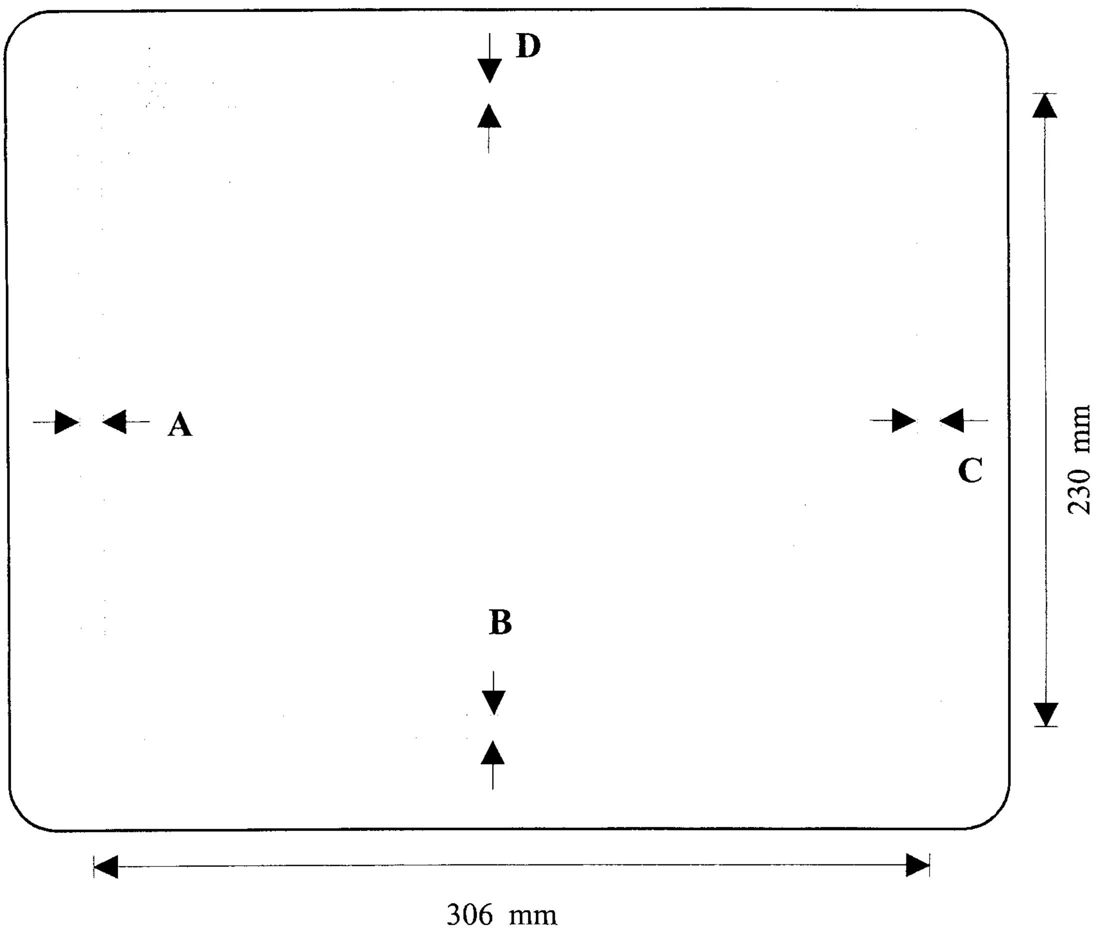

$A=B=C=D \leq 2.0$ mm

FIG-4 IMAGE GEOMETRY

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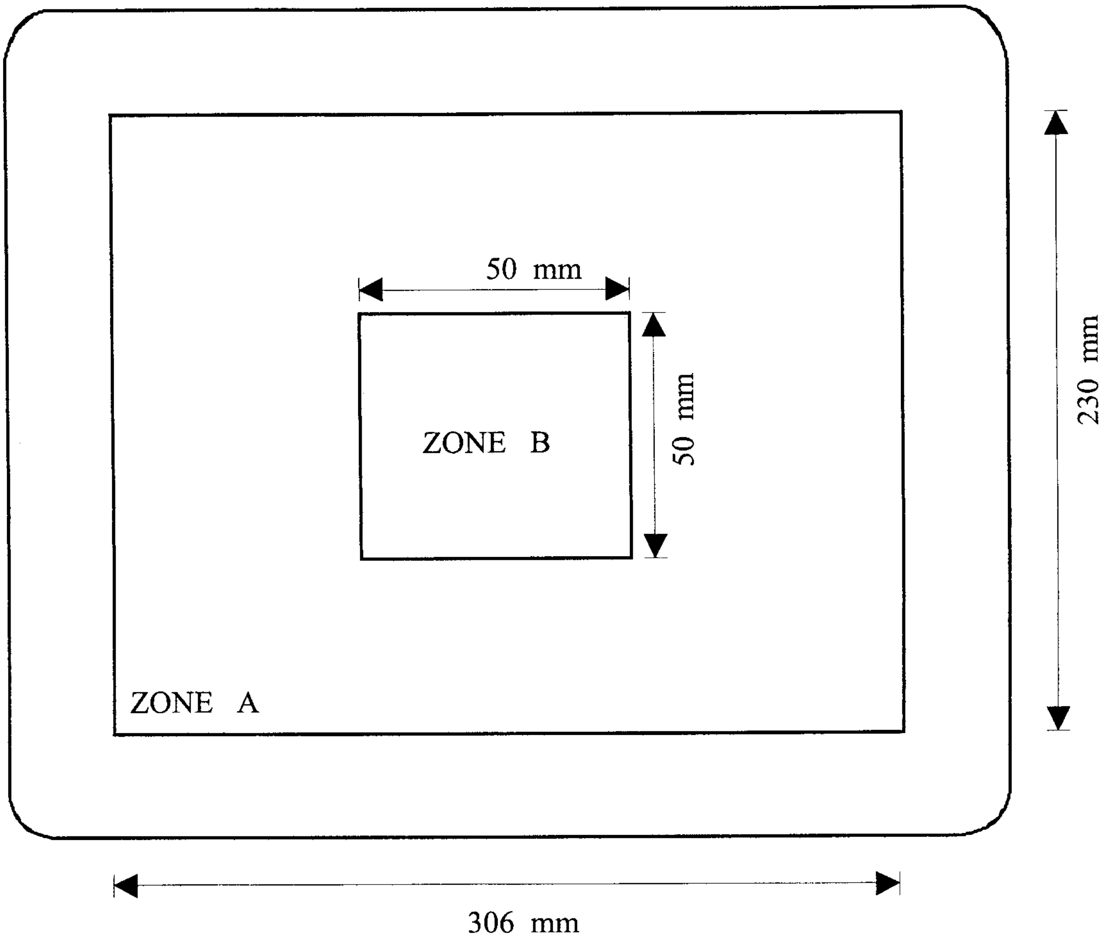

FIG-5 CONTRAST AND BRIGHTNESS MEASUREMENT AREA

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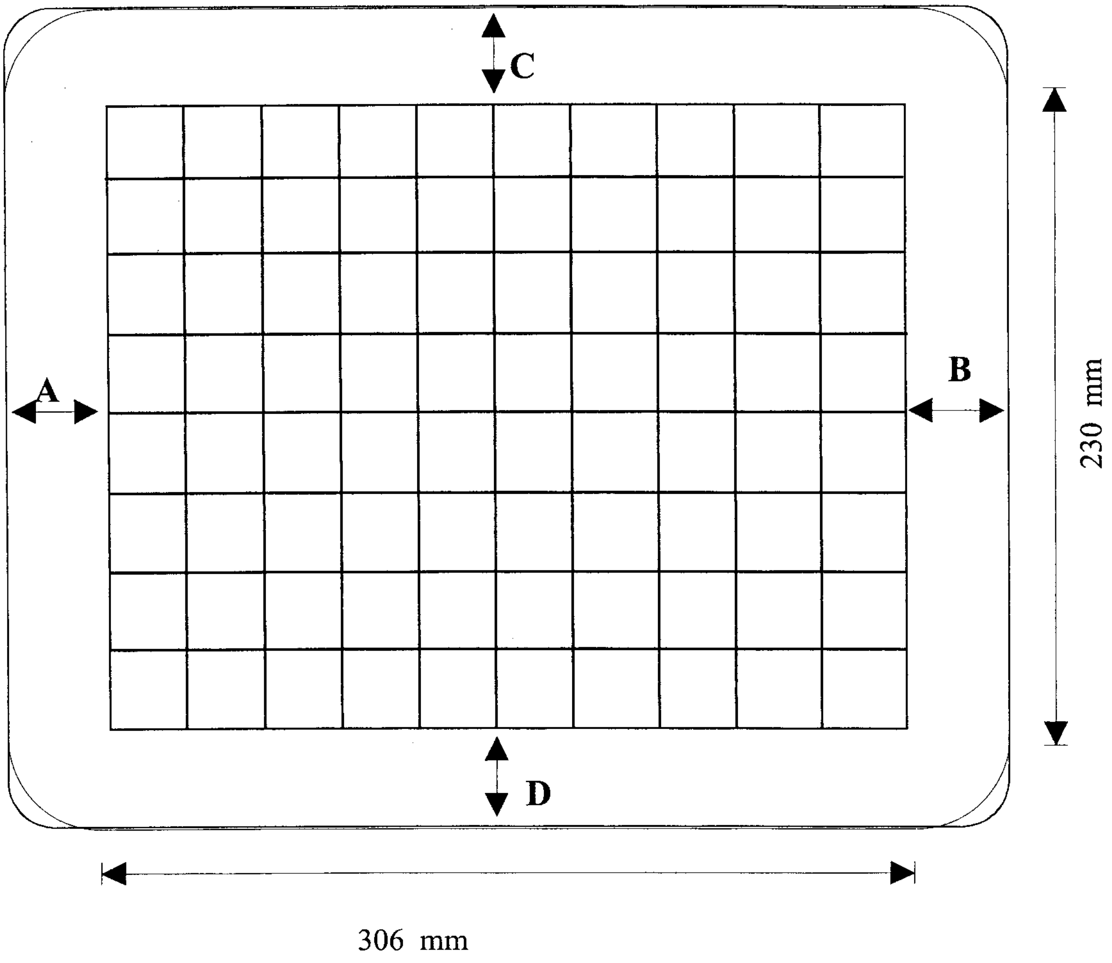

|A-B| AND |C-D| ≤ 5 mm

FIG-2 IMAGE CENTERING

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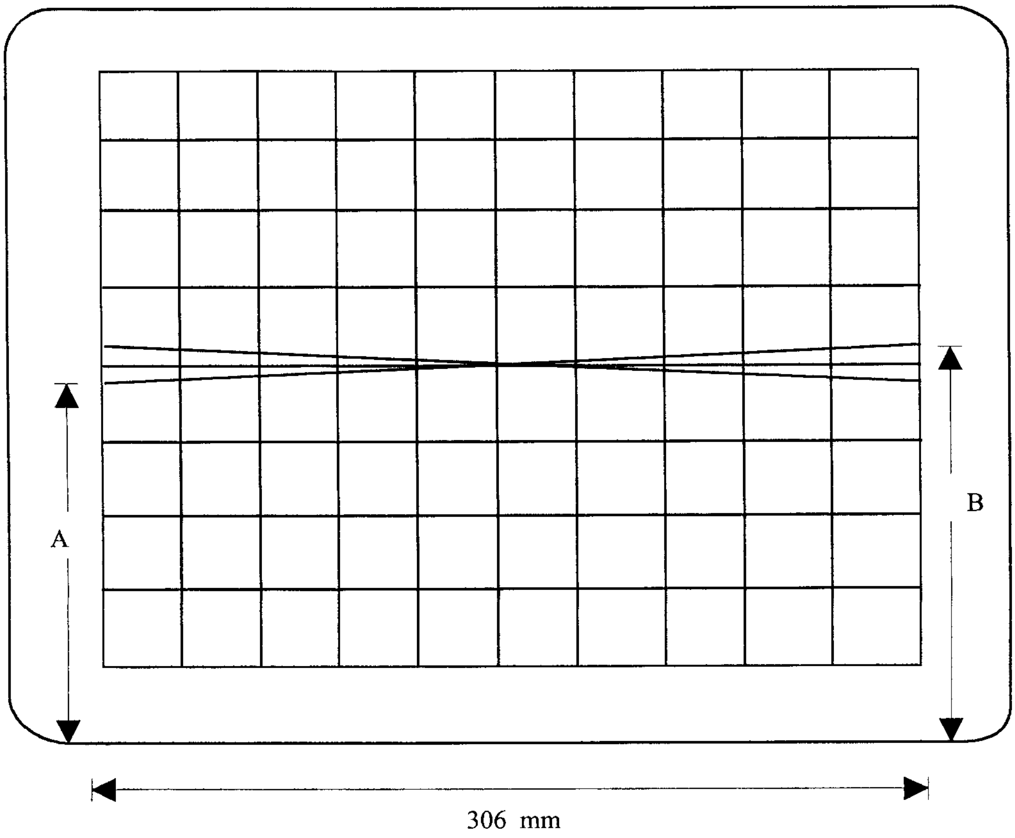

$|A-B| \leq 2$ mm

FIG-3 IMAGE ROTATION

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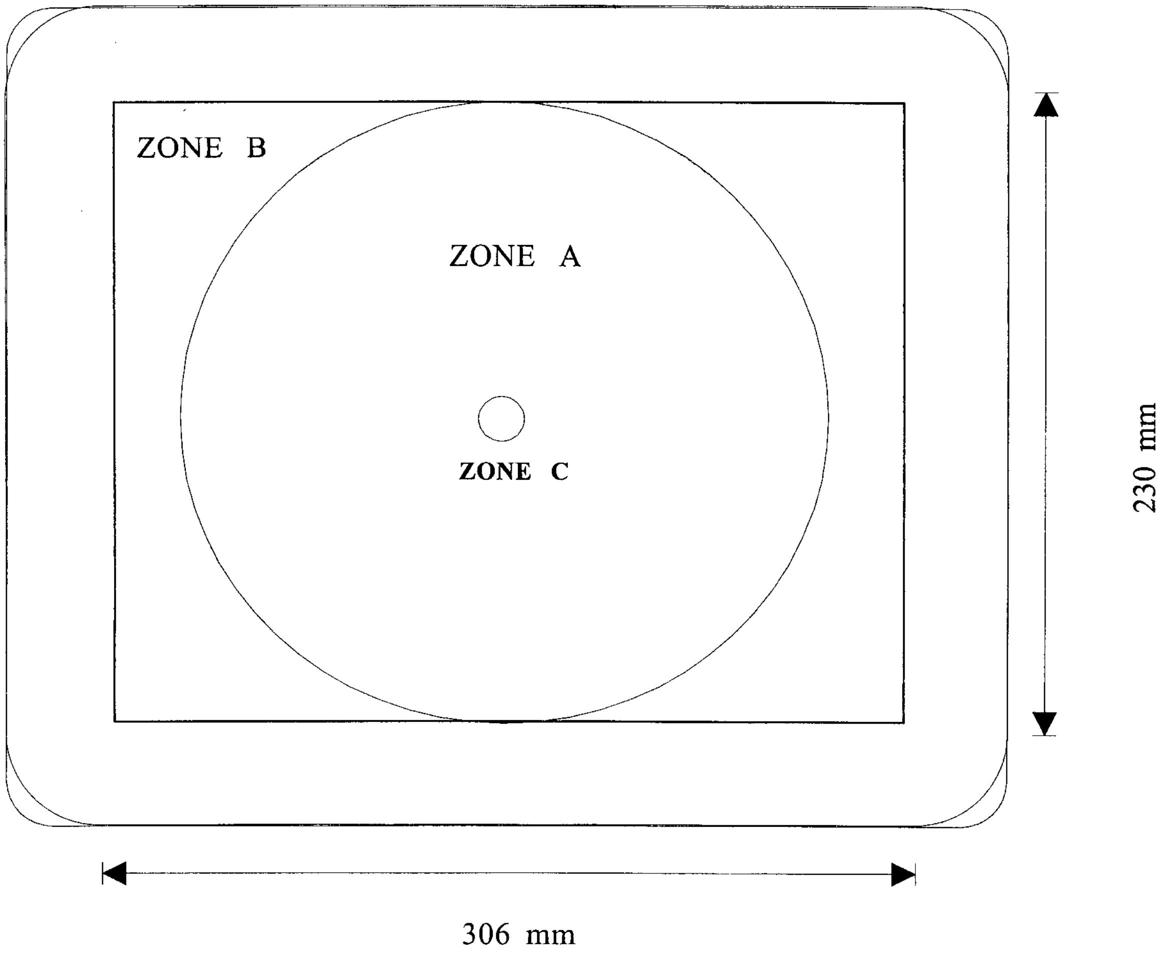

FIG-6 MISCONVERGENCE

CLASS NO. 99-07-02	17" Cm2300 GS-III CMTR TYPE : 107S11/97C (COCA+) BRAND : PHILIPS (107S-70K)		8639 000 10107		
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1 BYTE = 8BITS

LINE	HEX.DATA	
0	0	0
1	0	0
2	7	C
3	8	2
4	8	2
5	9	E
6	9	2
7	9	2
8	9	C
9	8	0
A	7	C
B	0	0
C	0	0
D	0	0
E	0	0
F	0	0

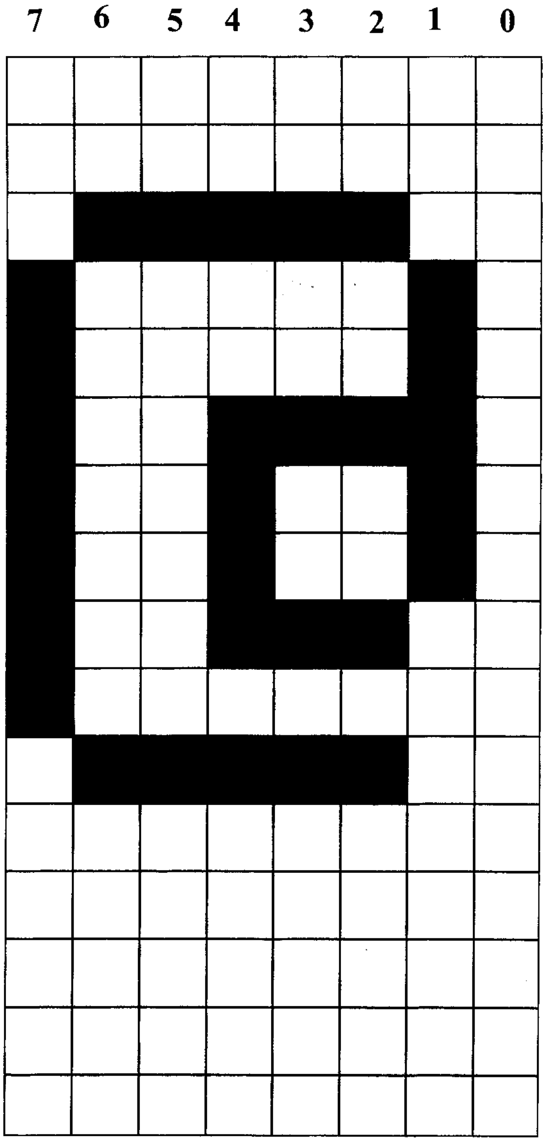

Fig 7 CHARACTER FORMAT FOR FOCUS CHECK

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TELEVISION/MONITOR SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed in accordance with the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with an s by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol s on the schematic diagrams and /or exploded views.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.
9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit may be safely operated without danger of electrical shock .

* Broken line ▬ · ▬ · ▬ · ▬ · ▬ · ▬

Implosion

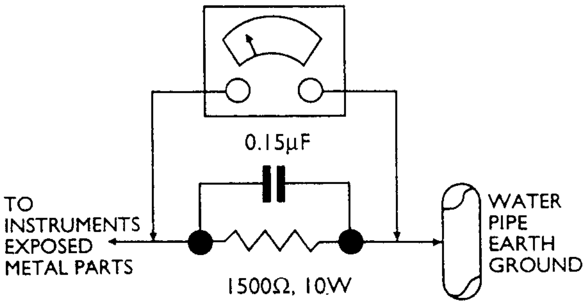
1. All picture tubes used In current model receivers are equipped with an integral implosion system. Care should always be used, and safety glasses worn, whenever handling any picture tube. Avoid scratching or otherwise damaging the picture tube during installation.
2. Use only replacement tubes specified by the manufacturer.

X-radiation

1. Be sure procedures and instructions to all your service personnel cover the subject of X-radiation. Potential sources of X-rays in TV receivers are the picture tube and the high voltage circuits. The basic precaution which must be exercised is to keep the high voltage at the factory recommended level.
2. To avoid possible exposure to X-radiation and electrical shock, only the manufacturer's specified anode connectors must be used.
3. It is essential that the service technician has an accurate HV meter available at all times. The calibration of this meter should be checked periodically against a reference standard.
4. When the HV circuitry is operating properly there is no possibility of an X-radiation problem. High voltage should always be kept at the manufacturer's raied value - no higher - for optimum performance. Every time a color set is serviced, the brightness should be run up and down while monitoring the HV with a meter to be certain that the HV is regulated correctly and does not exceed the specified value. We suggest that you and your technicians review test procedures so that HV and HV regulation are always checked as a standard servicing procedure, and the reason for this prudent routine is clearly understood by everyone. It is important to use an accurate and reliable HV meter. It is recommended that the HV reading be recorded on each customer's invoice, which will demonstrate a proper concern for the customer's safety.
5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, reduce the line voltage by means of a Variac to bring the HV into acceptable limits while troubleshooting. Do not operate the chassis longer than necessary to locate the cause of the excessive HV.
6. New picture tubes are specifically designed to withstand higher operating voltages without creating undesirable X-radiation. It is strongly recommended that any shop test fixture which is to be used with the new higher voltage chassis be equipped with one of the new type tubes designed for this service. Addition of a permanently connected HV meter to the shop test fixture is advisable. The CRT types used in these new sets should never be replaced with any other types, as this may result in excessive X-radiation.
7. It is essential to use the specified picture tube to avoid a possible X-radiation problem.
8. Most TV receivers contain some type of emergency "Hold Down" circuit to prevent HV from rising to excessive levels in the presence of a failure mode. These various circuits should be understood by all technicians servicing them, especially since many hold down circuits are inoperative as long as the receiver performs normally.

Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled receiver directly into the ac outlet.
2. Connect a 1.5k, 10W resistor paralleled by a 0.15uF. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/ volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage curren tester may be used to make this test; leakage current must not exceed 0.5milliamps. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note:An ac adapter is necessary when a polarized plug Is used. Do not defeat the polarizing feature of the plug.)

Picture Tube Replacement

The primary source of X-radiation in this television receiver is the picture tube. The picture tube utilized in this chassis is specially constructed to limit X-radiation emissions. For continued X-radiation protection, the replacement tube must be the same type as the original, including suffix letter, or a Philips approved type.

Parts Replacement

Many electrical and mechanical parts in Philips television sets have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards.

WARNING: Before removing the CRT anode cap, turn the unit **OFF** and short the HIGH VOLTAGE to the CRT DAG ground.
SERVICE NOTE: The CRT DAG is not at chassis ground.